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The Province of Alberta

IN THE MATTER OF "THE NATURAL
GAS UTILITIES ACT"

—and—

IN THE MATTER OF an Enquiry into
Scheme to be adopted for Gathering,
Processing and Transmission of
Natural Gas in Turner Valley

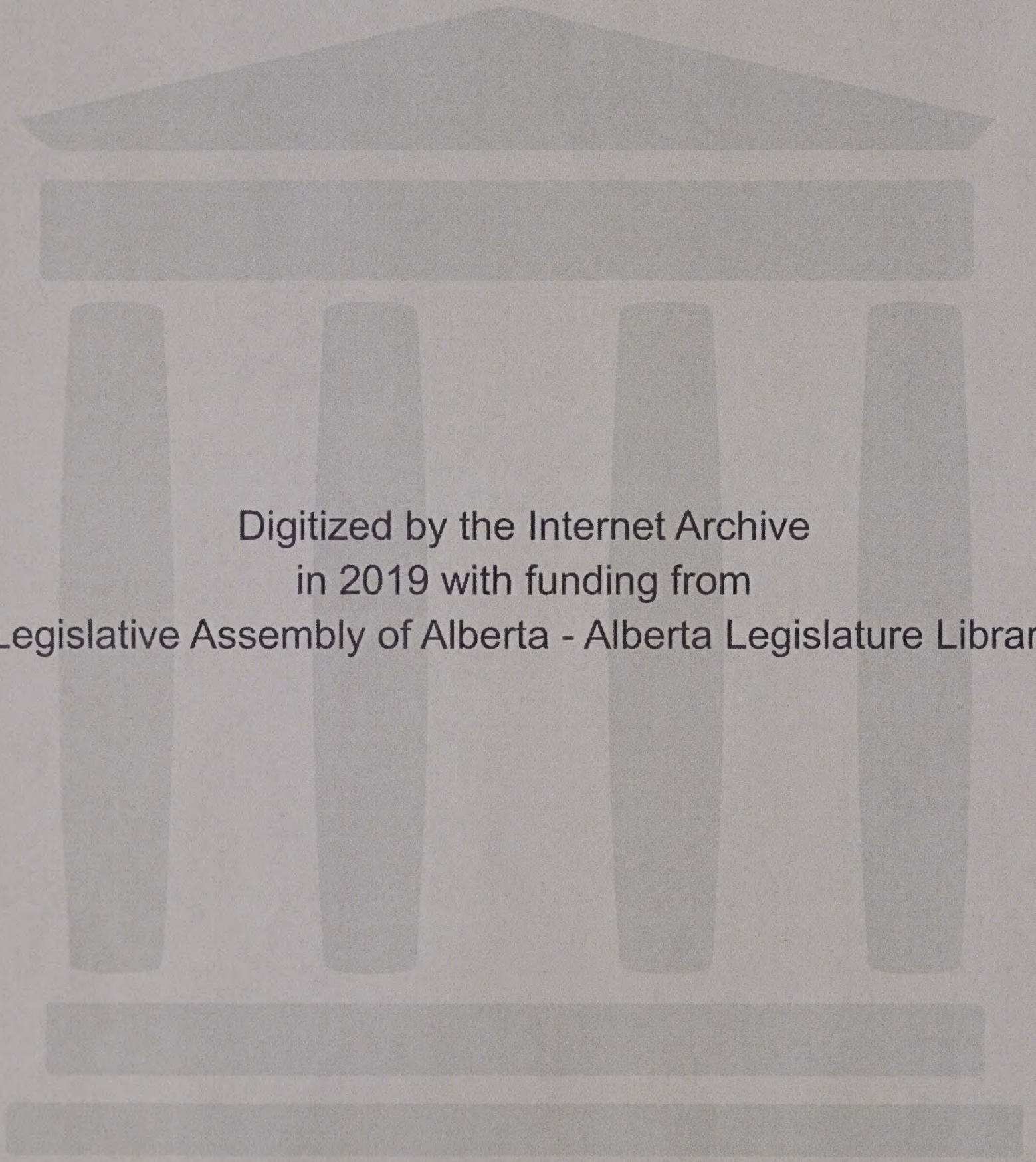
G. M. BLACKSTOCK, Esq., K.C., *Chairman*

Dr. E. H. BOOMER, F.C.I.C., *Commissioner*

Session:

CALGARY, Alberta September 10th, 1945

VOLUME 36



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I N D E X

VOLUME 36

September 10th, 1945.

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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Figure 1. Schematic diagram of the experimental setup. The subject is seated in a chair, viewing a video screen. The screen displays a target (a red dot) and a starting point (a green dot). The subject's hand is positioned at the starting point. The distance between the starting point and the target is 10 cm. The subject is instructed to move the hand from the starting point to the target. The video screen is 100 cm high and 100 cm wide. The starting point is 50 cm from the left edge of the screen. The target is 50 cm from the right edge of the screen. The subject's hand is 50 cm from the left edge of the screen. The distance between the starting point and the target is 10 cm. The subject is instructed to move the hand from the starting point to the target.

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9.30 A.M.Session,
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THE CHAIRMAN: All right, Mr. Harvie.

MR. HARVIE: Call Mr. Teis.

KENNETH ROBERT TEIS, having been first

duly sworn, examined by Mr. Harvie, testified as follows:-

Q Mr.Teis, you are sworn?

A Yes sir.

Q And you are a Civil Engineer?

A I am a Petroleum Engineer.

Q A Petroleum Engineer?

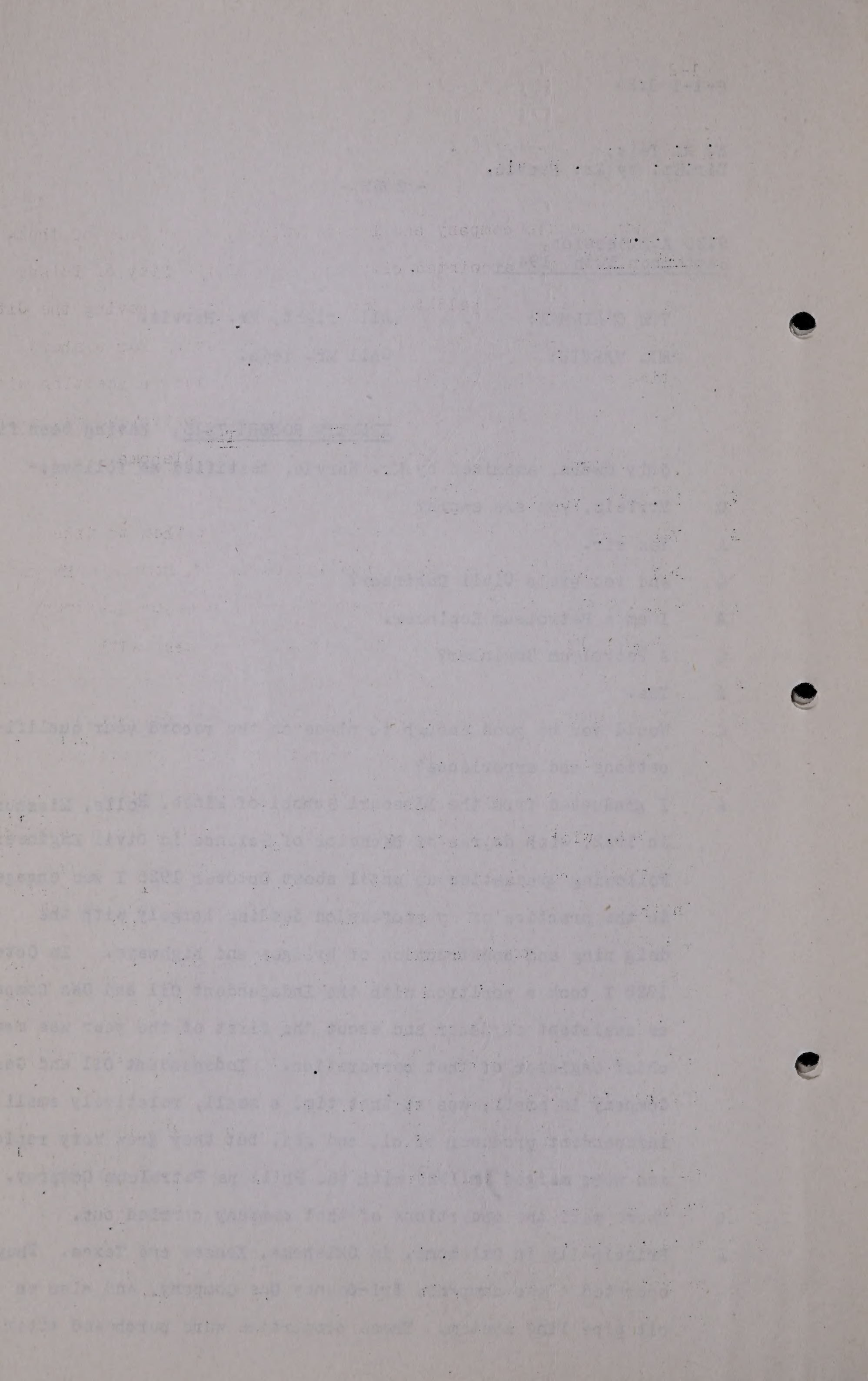
A Yes.

Q Would you be good enough to place on the record your qualifications and experience?

A I graduated from the Missouri School of Mines, Rolla, Missouri, in 1922, with degree of Bachelor of Science in Civil Engineering. Following graduation up until about October 1925 I was engaged in the practice of my profession dealing largely with the designing and construction of bridges and highways. In October 1925 I took a position with the Independent Oil and Gas Company as assistant engineer and about the first of the year was made chief engineer of that corporation. Independent Oil and Gas Company is small, was at that time a small, relatively small independent producer of oil and gas, but they grew very rapidly and were merged in 1929 with the Phillips Petroleum Company.

Q Where were the operations of that company carried out.

A Principally in Oklahoma, in Oklahoma, Kansas and Texas. They operated a gas company, Tri-County Gas Company, and also an oil pipe line system. These properties were purchased after



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I came to the company and I made valuations of both of them. In 1928 I was appointed city engineer of the City of Tulsa, which position I held for two years. After leaving the City of Tulsa I worked for the Gulf Oil Corporation for a short time as petroleum engineer, after which I took a position with the Phillips Petroleum Company as district petroleum engineer for the area covering Kansas and Northern Oklahoma.

Q How long were you with them?

A Oh, a matter of about three years. I left them to take a position with E. H. Moore, now Senator E. H. Moore. He was an independent oil producer and had made a major discovery in the Ponotoc County, Oklahoma. My work with him was in the nature of chief engineer and I had considerable supervisory responsibility. In 1938 I left the employ of Mr. Moore and engaged in the private practice of engineering specialist in petroleum and natural gas which work I am in now. For a period of about two and a half years however, I occupied the position of chief engineer with the Sunray Oil Company, one of the major independent oil companies engaging in the production of oil and gas.

Q So for the last five or six years with the exception of that period with the Sunray Oil, you have been in private practice as a consulting engineer on petroleum and natural gas matters?

A That is correct, yes.

Q You were requested by the British American Oil Company, Mr. Teis, to make a valuation of certain properties in Alberta, I believe?

A I was, yes.

Q And did you do that?

A I did.

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Q And did you make or submit such a report?

A I did.

Q Mr. Chairman, just for reference purposes, Mr. Teis' report on the old gas gathering line is included in Volume 2 commencing at page 28 of the Company's submittal, and with your permission I think maybe we will start there, finish that report, and then Mr. Donahue will give the rest of the report. I think it will keep the sequence better. My suggestion would be to make that whole report as Exhibit 102.

THE CHAIRMAN: Exhibit 102.

BRITISH AMERICAN GAS UTILITIES
LTD. CAPITAL EXPENDITURES & APPRAISED
VALUATIONS, VOLUME 2, MARKED AS
EXHIBIT 102.

Q Now would you be just good enough to read your report, Mr. Teis?

A I will read the letter of transmittal accompanying my report of values to the British American Oil Company Limited, dated November 22nd, 1944.

"British American Oil Company, Limited,
Calgary, Alberta.

Canada.

Gentlemen:-

At your request, I have made a determination of value of the High Pressure Gas Gathering System of your company, located in the Turner Valley Oil Field in the Province of Alberta, as same exists of this date.

The physical assets, to which values are assigned herein, include the pipe lines and all appurtenances such as valves, meters, drips, by-passes, etc. used in transporting high pressure gas from producing oil and gas wells to your Absorption Plant. The location, nominal size, and length of

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the various pipe lines comprising the systems, are more specifically indicated by the map included in this report.

Construction of the Turner Valley Gas Gathering System has progressed over a period of some eight years, the initial sections having been built in 1936.

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During the intervening period, additions and changes have been made to meet varying well conditions in the area served. As a result, the system is composed of quite a variety of different classes of pipe which, in some cases, may not represent the most economical conduit under existing volume and pressure conditions.

The company now has under construction a second Gas Gathering System the purpose of which is to serve those wells in which the operating pressure has declined to a point which makes it impractical to transport the gas to the plant, except by means of intermediate compression. This new system is known as the Low Pressure Gas Gathering System and no portion of the assets thereof are included in the values stated herein:

SUMMARY OF QUANTITIES AND VALUES

Immediately following this discussion is Schedule I, in which the quantity of tubular material is summarized in detail. The system is found to comprise a total of 12.089 miles of pipe line of the following sizes and lengths:

Pipe Summary

<u>Pipe</u> <u>Nominal Diameter</u>	<u>Total Length</u>	
	<u>Lineal Feet</u>	<u>Miles</u>
2"	424	0.080
3"	4,161	0.788
4"	12,447	2.357
5"	7,650	1.449
6"	18,982	3.595
8"	7,538	1.428
10"	9,058	1.716
12"	3,570	0.676
Total	63,830	12.089

A detailed summary of values is to be found in Schedule II. The values stated therein represent my determination of the cost to replace the system under current material

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and labor prices; reduced by an amount equivalent to the observed depreciation of the material. The values are briefly summarized as follows:-

Summary of Values

<u>Item of Cost</u>	<u>Appraised Value</u>
1. Pipe	\$ 48,400.91
2. Valves, Fittings, Meters, etc.	22,201.67
3. Installation Costs	65,686.93
4. Rights of Way, Survey and Legal Expenses	4,215.26
5. Supervisional and administrative expense	14,040.50
6. Total Appraised Value	\$154,545.27

BASIS OF VALUATION

The appraised value of the system represents the replacement cost at existing prices of material and labor, less an amount equivalent to the observed depreciation of the physical equipment.

It is my opinion that all major portions of the system are now useful in the transportation of gas from producing wells to the Absorption Plant. No account has been taken of the adequacy, efficiency, or economy of the general design of the system.

I might explain that last statement and amplify it a little bit. I made no determination of the size of pipe which might be proper for the volume of gas, the maximum volume of gas which might at that time be transmitted through the system. I am satisfied that the pipe is all of adequate wall thickness to render service throughout the future life of the gas reserves. I say that for the reason that the lines were operated at a much higher pressure than they were being operated at the time I made these field surveys and with the declining pressure it is self-evident that the pipe is adequate for pressure requirements. I made no investi-

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gation as to the efficiency of design, as to the direction of the line of the pipe. That is it is conceivable that some other engineer might design a system which would be somewhat different in general composition than exists in this particular system, because as I say previously the system was the result of a process of evolution and adjusting the situation to meeting changing well conditions and so forth and therefore might not be entirely the most efficient sort of design. However it is my opinion that the system is generally useful for the purpose to which it is being put. Now I will continue reading the letter.

FIELD SURVEY

Preparation of this report was prefaced by a field survey of the system. This survey included an inspection of all surface equipment. All of this material was inventoried in detail. Since all pipe is under ground, inspection bell holes were dug at intervals along the lines by means of which the exterior surface of the pipe was examined. The pipe and fittings were also examined where same are inclosed in valve and junction boxes. Inspection was made at some fifty points.

I might say here that a total of 32, I believe, bell holes were dug and the pipe was inspected generally between each one of the points at which the character and the diameter of the pipe changed. That is I made an effort to uncover and inspect the external surface of the pipe of each grade and size of pipe.

As a result of this inspection, we conclude that the pipe has sustained very little corrosion due to contact with the soil. There is some evidence of localized rust in several of the valve and junction boxes and at a location just

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north of Station "B" (See map) where the pipe passes through a concrete anchorage block. At all other points the pipe coating is intact and the appearance of the pipe gives evidence of only normal deterioration.

Two sections of pipe were cut and removed from the line so that the interior surface might be inspected. Examination of these samples failed to reveal abnormal internal corrosion. The opinion that little corrosive action results from passage of gas through the lines, is further supported by the fact that periodical inspection and measurement of wall thickness, made by the provincial boiler inspector, has also failed to reveal any measurable deterioration of the pipe.

All evidence supports the conclusion that the pipe has deteriorated very little while in use, and that its present condition is such that its usable life will extend beyond the indicated service requirements.

The lengths of the various sections of pipe were not measured by me but I have every reason to believe the reported lengths are approximately correct. The lengths shown here, in most instances, have been taken from the certified plats prepared by the surveyor.

I might state here that the major portion of the line was surveyed and certified plats of the survey made and were on file at the office of the Absorption Plant at the time I made the survey. I checked these records against the lengths recorded on the working map which was given me. In some cases they did not check exactly. There were some discrepancies. So I decided to use the surveyor's plats in most instances. However there was a further check against

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the lengths of lines in most cases in the statement of the material that went into the lines. I considered all the evidence in arriving at the final lengths which appear in the Table and on the plats and I am satisfied that the lengths shown there are very close to the actual lengths of the various sections.

As it was definitely impractical to uncover all of the pipe, it is quite possible that some discrepancies exist in the description of the pipe reported to be located in certain sections of the system. Material descriptions contained in the company's records are brief to the point of inadequacy, with the result that it has been impossible to definitely determine the class of pipe used in some sections of the system; however, the company records do give a satisfactory overall classification of the material purchased and used. We have, therefore, adjusted the total quantities of the various classes of pipe to agree with the statements.

MATERIAL PRICES

The prices, which furnish the basis of value for all items of material, were furnished to the company by vendors of such supplies and represent the present market price of like new material, except that the price of boiler flues is the second hand price. All prices are stated in Canadian money and include tariff and freight to Okotoks, the nearest rail point.

The depreciation factor applied to the material prices represents my opinion of the deduction required to reduce the quoted prices to the present fair value of the material. In fixing the discount factor, I have taken into

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description of the general situation in the country.

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description of the general situation in the country.

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account and observed condition of the material and have given weight to the relative utility and salvage value to that of suitable material purchased at present day prices.

These prices were in general submitted to company officials here in Calgary and transmitted to me after I went back to Tulsa. I obtained some additional prices from the Mid-Continent Supply Company at Tulsa and from the National Supply Company and the Oilwell Supply Company. I made every effort to arrive at the present market price for this material. In one or two instances I was unable to obtain prices covering the exact weight of pipe which was in the line. In such cases I interpolated a price on a pound basis of the price of pipe of probably somewhat smaller and maybe a little larger diameter on each side of the diameter of the particular pipe I was attempting to determine the price of. The system contains several sections of light-weight spiral weld pipe in two diameters 10 and 12 inch. The price of that material was obtained from the Mid-Continent Supply Company of Tulsa. In the section of the line directly north of the Absorption Plant, the material is heavy-weight oilwell casing.

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This material is of course, the pipe is much heavier than necessary for the service it is performing at this time, in fact I believe it connects with some of this spiral well pipe. I therefore adjusted the value of this 12 inch to that of equal diameter of the spiral weld pipe. Of course the price of the casing was much higher than the special well pipe.

Q That is you reduced the price of the casing to the spiral well pipe ?

A The equivalent diameter of the special well pipe.

INSTALLATION COSTS

The construction contract made July 2, 1944 between H. L. Gentry Engineering Compan, and The British American Oil Company, Limited, is used as the basis for costs of installation set out herein. Contained in this contract are unit prices to be paid for work done by Gentry on the Low Pressure Gas System now under construction in the Turner Valley Field. It is believed that this contract is the best evidence of present day construction costs.

The unit prices set out in the Gentry contract are to be paid in American funds and include the following items of labor: (1) unloading pipe at rail point, (2) hauling pipe and stringing same along the right-of-way, (3) excavating ditch, (4) welding pipe together, (5) placing pipe in ditch, testing same and repairing any leaks due to faulty welds, (6) back filling ditch. Gentry is to furnish all necessary labor, construction supervision, welding rod, construction tools and equipment necessary to construct and lay the pipe lines. River crossing construction and auxiliary connection work is not to be done except at extra cost. The contractor furnishes no material except welding rod.

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The prices set forth in the Gentry contract, when converted to Canadian funds are as follows:-

Cost of Installation

H. L. Gentry Engineering Company Contract

<u>Size Pipe</u>	<u>Unit Price</u>
2" D.R.L.	\$ 0.4218
3" "	0.5217

These are the prices in dollars.

4" D.R.L.	0.7548
5" "	0.7770
6" "	0.9546
8" "	1.1322
10" "	1.4097
12" "	1.6872

The system evaluated herein includes, in addition to the main and lateral pipe lines, a considerable number of auxiliary items such as drips, meters and meter runs, valves, valve boxes, etc., the installation of which would not be carried out under the prices above stated. The cost of this work is estimated on a man hour basis after personal inspection of these facilities. Connection labor is estimated at \$0.65 per man hour and welding labor at \$0.94 per man hour.

I might say that this work includes river crossings, junction wells and construction of drips, meter runs, and meter settings, the boxes in which the junctions and valves are contained and the drips and such other miscellaneous work which is not generally considered to be a part of a pipe line construction job.

Q Mr. Teis, in referring to the size of the pipe, 2", 3", etc., you use the initials "3" D.R.L.", will you explain what that is?

A That is double random length pipe. It describes the length of the pipe, the pieces of pipe which would be larger than under that price.

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RIGHTS-OF-WAY, SURVEY AND LEGAL EXPENSE

We are advised by company representatives that the price paid for pipe line rights-of-way in the Turner Valley Field is \$75.00 per acre, based on a 16.5 foot width, which is equivalent to \$150.00 per mile, and that survey costs have averaged \$150.00 per mile. The company's records of legal fees paid indicate an average cost of about \$50.00 per mile. The total of the three items is \$350.00 per mile, or \$0.0663 per lineal foot of pipe line, which figure has been used herein as a basis for determining these costs.

SUPERVISORIAL AND ADMINISTRATIVE EXPENSE

General supervisory and administrative expense includes such items as engineering design, general inspection and supervision of the work, and that portion of the general office expense and executive salaries chargeable to the project. For these services an additional 10% is added to the total cost which includes the value of the material and the cost of installation.

CONCLUSIONS

The High Pressure Gas Gathering System of the British American Oil Company for which value is determined herein is found to comprise some, there is a typographical error here which I would like to correct at this time, comprise some 12.1 miles, instead of 12.4 miles, - to comprise some 12.1 miles of pipe lines of various sizes and to include such auxiliary appurtenances as metering stations, manifolds, valves, etc., all of which are necessary to the transportation of gas from well head to the Company's Absorption Plant.

On the whole, the system is in good condition and is expected to function in a satisfactory manner throughout the

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311

LECTURE 10

THEORY OF THE ATOM

1. INTRODUCTION

2. THE BOHR MODEL

3. THE SCHRÖDINGER EQUATION

4. THE HYDROGEN ATOM

5. THE MULTI-ELECTRON ATOM

6. THE PERIODIC TABLE

7. THE QUANTUM MECHANICAL MODEL

8. THE ATOMIC SPECTRA

9. THE LASER

10. THE SEMICONDUCTOR

11. THE SUPERCONDUCTOR

12. THE QUANTUM MECHANICAL MODEL

13. THE ATOMIC SPECTRA

14. THE LASER

15. THE SEMICONDUCTOR

16. THE SUPERCONDUCTOR

17. THE QUANTUM MECHANICAL MODEL

18. THE ATOMIC SPECTRA

19. THE LASER

20. THE SEMICONDUCTOR

21. THE SUPERCONDUCTOR

22. THE QUANTUM MECHANICAL MODEL

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future life of the producing wells.

Only normal deterioration has taken place in the pipe and auxiliary equipment so that for all practical purposes the material is expected to render service equal to that of new, during the remaining period of usefulness in its present location.

The value of the system is found to be \$154,545.27, same being the cost of replacement less observed depreciation of the equipment.

Respectfully submitted, K.R.Teis.

Q You might just explain the reference to Schedules 1 and 2, what they are.

A In Table 1, I have made a summary of the determined length of the various sizes of pipe in each section of the pipe line system and I have totalled the length of each section of the system and the total length of each size and character of pipe and reduced that to miles, 12.089 miles, which was used in the body of the letter.

Q So that the line designated as A-B, I am referring to the map on Page 39, would indicate where that was ?

A That is correct. The letters refer to the point designated on the map as indicated by the particular letters.

Q And just carrying that forward, referring to Schedule 1, I gather that in that line there is 3994 lineal feet of pipe which is made up of 424 feet of 2" line pipe, 1810 feet of 12" oil well casing, 1760 of Naylor spiral weld pipe, 12", is that correct ?

A That is correct, the length and description of the pipe as stated refers to this section between the letters A-B as shown on the map.

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Q Now Schedule 2, will you explain that ?

A In Schedule 2, I have summarized the values placed on the various sections of the line, broken down as to material and labour; the material designation being pipe, one item, valve fittings, meters and so forth is the second item, and installation costs which are the labour costs of installing the system.

I have also stated and estimated right-of-way, survey and legal expenses and also supervisional and administrative expenses. Those five items being totalled in the right hand column, which total represents my appraised value of the particular section of the line. Those values are further brought into a grand total at the bottom of each column and then the total estimated value of the entire system is represented by the figure at the lower right hand, below the right hand column, which is the \$154,545.27 mentioned in the letter.

Q Mr. Teis, I note that in that schedule, in valuing the pipe, you have used throughout a used value which you took for each section of the pipe line ?

A That is correct, that is the value after depreciation.

Q Now I believe you were requested by the Company at a later date to prepare a supplementary statement which would also show a value you used as of today's new value for similar pipe ?

A I did. I prepared a supplementary statement, a copy of which I have here.

MR. HARVIE: Will you file that, Mr. Chairman, either as another Exhibit or just attached to that Schedule.

THE CHAIRMAN: It is really a part of the Exhibit which we now have.

MR. HARVIE: Yes it is.

1. The first part of the report is a general introduction to the subject of the study.

2. The second part of the report is a detailed description of the methods used in the study.

3. The third part of the report is a detailed description of the results of the study.

4. The fourth part of the report is a detailed description of the conclusions of the study.

5. The fifth part of the report is a detailed description of the recommendations of the study.

6. The sixth part of the report is a detailed description of the limitations of the study.

7. The seventh part of the report is a detailed description of the future research needs.

8. The eighth part of the report is a detailed description of the acknowledgments.

9. The ninth part of the report is a detailed description of the references.

10. The tenth part of the report is a detailed description of the appendices.

11. The eleventh part of the report is a detailed description of the glossary.

12. The twelfth part of the report is a detailed description of the index.

13. The thirteenth part of the report is a detailed description of the bibliography.

14. The fourteenth part of the report is a detailed description of the list of figures.

15. The fifteenth part of the report is a detailed description of the list of tables.

16. The sixteenth part of the report is a detailed description of the list of abbreviations.

17. The seventeenth part of the report is a detailed description of the list of symbols.

18. The eighteenth part of the report is a detailed description of the list of units.

C-1-6

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THE CHAIRMAN: Just receive it then as part of Exhibit
102.

SUPPLEMENTARY STATEMENT PRODUCED
BY THE WITNESS TEIS HERE MADE
PART OF AND ATTACHED TO EXHIBIT
102.

(Go to Page 2753)

M-1-1-10.20 A.M.

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Q Will you just explain what additional information -

A This Schedule which was submitted as a Supplementary Schedule to my report contains nothing that is not included in the original report submitted. I might qualify that somewhat. It contains nothing which might not be determined from the values set forth in the original report. It is merely a break-down of the costs which is somewhat different from the one included in the report in that it sets out the gross reproduction costs new, and also the observed depreciation in dollars. The latter designation to the left is a table referring to the sections of the pipe line as indicated on the map and as shown in Table #2 which was originally included in the report. I have shown on this supplementary tabulation the value of the pipe, that is a gross new cost of pipe, present day market, the cost of materials other than pipe which would include valves, meters, fittings, drips and various other appurtenances to the pipe line system which are necessary for the purpose which the system serves. The third column shows installation costs. The fourth column shows the right-of-way and legal costs and a fifth column in which the supervision and administrative expense is set out separately. The total of these quantities is the undepreciated appraised values of the section of the lines and to the right of this total column I have set out my estimation of the observed depreciation of the material comprised in the system. The last column to the right of the supplementary table represents a net value of the section to which it refers.

Q Which is the same figure ?

A Which is the same figure as is included in Table #2. You will note that I have reduced the replacement cost of material

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in the system by approximately \$31,000.00 as a depreciation total.

Q Have you got any comments to make in regard to the map that is filed ?

A The map ?

Q Yes, or is that self explanatory ?

A I think the map is more or less self explanatory. It is more or less of an index map and does not purport to show the system in any great detail. It shows the location of various sections of the line and gives some conception of the line of the general system. The absorption plant is located at point A you will note.

Q I note in your report Mr. Teis, that you state that the values stated therein represents my determination of the cost to replace the system under current material and labour prices, reduced by the amount of the equivalent observed depreciation of materials. I think that is commonly known as a value on the basis of replacement, less observed depreciation and that is I believe the system you have adopted in making this valuation ?

A That is true, yes.

Q Have you anything to say about that basis as being applicable to this valuation ?

A Well there is quite a number of types of approach to follow from this sort and there may be some question as just what approach is most proper. I consider, my concept. I might say of this valuation at the time I made it was somewhat like this. I conceived this system as being purchased for a use to which it had not been put in the past. In bringing this system into a public utility it represented the transfer of physical assets into a quite different operation. Therefore I conceived the

K. R. Teis,
Dir.Exam. by Mr. Harvie.

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thing as being somewhat parallel to that of a sale and my test to be to determine what is generally termed a fair market value of the plant, that is physical equipment. If a utility were entering upon a new project they would necessarily be required to construct a gas gathering system somewhat of the same character which I have valued. Such being the case they would have to buy the material at the going market price at the time they built it and they would have to pay the standard scale of wages and costs in order to get it installed. I felt then and feel now that a fair price for this system is represented by the figure which I have placed on it. In other words, the utility would be able to acquire this system fully constructed for \$31,000.00 less than if put in themselves. That is I think generally speaking my conception of the thing and the basis upon which I made my valuation.

Q You think that is a fair and proper basis and preferable to any other one you have in mind ?

A I think it is.

Q Mr. Teis, I believe you . . . either met or had some communication with Mr. Biddison?

A I did not meet Mr. Biddison. Mr. Biddison called me from Barbersville at my Tulsa office and *also* transmitted a letter to me. We talked briefly over the 'phone and I answered some questions which he raised in a letter and I did not have any personal contact with Mr. Biddison. He was unable to get down to Tulsa and we did not confer in regard to this matter which I would have been glad to.

Q Do you know what Mr. Biddison was -

A He told me he was retained by the Board here in Alberta as a consultant and that he had discussed with Mr. McCutchin my

1911

1. The first part of the year was spent in the
2. study of the history of the country.
3. The second part was spent in the
4. study of the geography of the country.
5. The third part was spent in the
6. study of the natural history of the country.
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8. study of the social history of the country.
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10. study of the political history of the country.
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12. study of the economic history of the country.
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14. study of the cultural history of the country.
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16. study of the scientific history of the country.
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18. study of the literary history of the country.
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50. study of the geological history of the country.
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52. study of the meteorological history of the country.
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54. study of the climatological history of the country.
55. The twenty-eighth part was spent in the
56. study of the oceanographical history of the country.
57. The twenty-ninth part was spent in the
58. study of the hydrological history of the country.
60. The thirtieth part was spent in the
61. study of the glaciological history of the country.
62. The thirty-first part was spent in the
63. study of the limnological history of the country.
64. The thirty-second part was spent in the
65. study of the ichthyological history of the country.
66. The thirty-third part was spent in the
67. study of the ornithological history of the country.
68. The thirty-fourth part was spent in the
69. study of the mammalogical history of the country.
70. The thirty-fifth part was spent in the
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79. study of the archaeological history of the country.
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81. study of the numismatic history of the country.
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97. study of the numismatic history of the country.
98. The forty-ninth part was spent in the
99. study of the epigraphical history of the country.
100. The fiftieth part was spent in the
101. study of the numismatic history of the country.

K. R. Teis,
Dir. Exam. by Mr. Harvie.

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report and had a few questions that he would like to discuss with me and he made a tentative appointment to come to Tulsa but was unable to do so.

Q You gave him the information he asked for ?

A I gave him the information by letter.

Q And you have never had any further correspondence with him ?

A I have not, no.

Q I note that in your report you referred to the basis on which you valued boiler flues. Where you say except that the price boiler flues is the second hand price. Will you just explain what you mean by that ?

A Well as I understand it these boiler flues are discarded flues from tubular boilers, generally locomotive boilers and are seldom if ever purchased by a gas transmission company except as second hand material. Therefore I did not consider the new price of any significance in this report and I just took the second hand price as of the date of the survey and a depreciated second hand price in the case of boiler flues. In the case of all other material the depreciation was applied to the cost of new material.

Q Now I note Mr. Teis, you possibly referred to the additional schedule that was filed this morning showing gross production costs new. You say your observed depreciation was approximately \$31,000.00. That was on what items in that schedule on the total cost or just material cost ?

A Just material cost.

Q So you have not in your valuation depreciated the installation, rights-of-way, supervision and administration costs. Is that correct ?

A I have not. I do not think that under a basis of appraisal

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K. R. Teis,
Dir.Exam. by Mr. Harvie.

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which I described as being the one upon which I made this valuation is acceptable and correct. I do not think that the depreciation other than physical materials is required. These other costs have no depreciation and, of course, such depreciation cannot be observed in literal interpretation and also under the concept which I have outlined I do not think it proper to depreciate these items of any concern to embark upon.

(Go to Page 2758)

K. R. Teis,
Dir. Ex. by Mr. Harvie.
Cr. Ex. by Mr. Fenerty.

- 2758 -

Q I have just roughly added the last two items, \$71,990.74 including pipe and other materials, and the twenty-nine thousand six hundred odd dollars which comes to approximately \$101,000.00. That would mean that there was something in excess of 30% depreciation of the over-all depreciation taken on equipment?

A It would be very close to 30%, yes.

Q I believe that you prepared rather extensive supporting material for the statements in considerable detail?

A I presume you refer.....

Q I might make a statement on that, it has been filed with the Board along with this, all the supporting details, and that is on the record. That is all, Mr. Teis.

.....

CROSS-EXAMINATION BY MR. FENERTY.

Q Mr. Teis, I believe that in public utility work there are many methods of valuation of physical assets recognized as popular in different commissions, in the States?

A Yes, that would be true.

Q And in this particular case you have taken the replacement cost on existing prices less observed depreciation?

A That is true, yes.

Q Now I am going to discuss some things with you, I am not going to refer to new installations, I am going to talk about old installations, and by the way, just before I come to generalities, you have told us that in the case of the tubing you took a percentage cost of secondhand tubing and that in the case of casing which you considered was heavier than was necessary for line work, you have reduced it to the value equivalent. Did you take that into consideration as secondhand or was it

1. *Phragmites australis* (Cav.) Trin. ex Steud.
 2. *Scirpus americanus* (L.) Link.

(continued)

• *Chlorophyll a* (Chl *a*)

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Figure 1 is a schematic diagram of the experimental setup. It shows a subject seated at a table, looking at a video screen. A video camera is positioned above the screen. A light source is positioned to the left of the screen. A target is positioned on the screen. A ruler is placed on the table. A scale bar is shown at the bottom right of the diagram.

K. R. Teis,
Cr. Ex. by Mr. Fenerty.

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secondhand do you know?

A Well I considered as I stated previously that the boiler values, that in the case of boiler flues the secondhand price was the only price that had any significance in my opinion. If I had taken the new price and tried to reduce it down, it would probably come out with an excessively high value, because the flues were excessively expensive when new. They are taken as secondhand material generally in these cases, and I considered it the best price for my purposes. In the case of oilwell casing, that casing might be said to be much better than for the purposes it is used now. The spiral weld piping most certainly would not blow out and most certainly could not possibly corrode down to the point it would not be useful. But the additional wall thickness and the excessive value of the casing I did not consider it to be applicable to the use to which it was being put, so I reduced it to the price of the spiral weld pipe.

Q In other words, it would not make much difference whether it was secondhand casing or not, because of putting a value based on thinner piping, you were accomplishing the same thing?

A Yes, that is true.

Q One more question just of a general nature, or two more. In connection with the water installation, I believe there is a later report dealing with the division of water installation as between compression and absorption operations?

MR. HARVIE: That is purely an operating cost.

MR. FENERTY: Now, as to the installations of all this water equipment you have here, I have a figure of....

A I beg your pardon, what did you say?

Q Water system \$36,000.00?

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1. The first part of the report deals with the general situation of the country.

2. The second part deals with the economic situation of the country.

3. The third part deals with the social situation of the country.

4. The fourth part deals with the political situation of the country.

5. The fifth part deals with the cultural situation of the country.

6. The sixth part deals with the military situation of the country.

7. The seventh part deals with the foreign relations of the country.

8. The eighth part deals with the internal security of the country.

9. The ninth part deals with the public health of the country.

10. The tenth part deals with the education of the country.

11. The eleventh part deals with the science and technology of the country.

12. The twelfth part deals with the sports and recreation of the country.

13. The thirteenth part deals with the arts and literature of the country.

14. The fourteenth part deals with the media and communication of the country.

15. The fifteenth part deals with the environment and natural resources of the country.

16. The sixteenth part deals with the urban and rural development of the country.

17. The seventeenth part deals with the transportation and infrastructure of the country.

18. The eighteenth part deals with the energy and power of the country.

19. The nineteenth part deals with the water and irrigation of the country.

20. The twentieth part deals with the housing and shelter of the country.

21. The twenty-first part deals with the food and nutrition of the country.

22. The twenty-second part deals with the clothing and textiles of the country.

23. The twenty-third part deals with the finance and banking of the country.

24. The twenty-fourth part deals with the taxation and revenue of the country.

25. The twenty-fifth part deals with the labor and employment of the country.

26. The twenty-sixth part deals with the social security and welfare of the country.

27. The twenty-seventh part deals with the population and demography of the country.

28. The twenty-eighth part deals with the migration and refugees of the country.

29. The twenty-ninth part deals with the statistics and data of the country.

30. The thirtieth part deals with the appendix and references of the country.

K. R. Teis,
Cr. Ex. by Mr. Fenerty.

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A I do not think I valued the water system.

Q I beg your pardon?

A The water system was not part of my valuation.

Q That will come in with somebody else?

MR. HARVIE: Yes, that will come up later.

MR. BLANCHARD: I think Mr. Teis' unit costs were used.

MR. HARVIE: The basis of valuing the water system was the basis that Mr. Teis used to value the gas gathering system, and it was also used to value the water system.

Q MR. FENERTY: Perhaps Mr. Teis can tell us about that. Did you make any inspection of the water system at all, Mr. Teis?

A No sir, I had nothing to do with the valuation of the water system.

Q Well we will leave that to whoever did that. Now I want to ask you one thing just for information as to the general method. Would you turn to, we will say, Schedules 1 and 2, pages 37 and 38, I just want to select one item here, B-H1-I-K, line pipe, 323, 10" weld, 6900, 7223, then that item carried through on to the next page, I observe that there is an item there Supervisional and Administrative Expense, \$2030.75, and I see that in comparing that item with other items of supervisional and administrative expense, it is not necessarily the same proportion of the total as in other items, at least, it seems to me that that is so. I was wondering if you could give me some idea, and if you would analyze that particular item?

A If I were to have the detail of that maybe I can answer your question. That is B-H1-I-K?

MR. BLANCHARD: Page 18 on your breakdown.

K. R. Teis,
Cr. Ex.by Mr. Fenerty.

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THE CHAIRMAN: What volume is that in?

MR. BLANCHARD: That is in Exhibit 102, Sir. It was in 2A.

MR. HARVIE: That is a supplementary data that the Board has.

MR. FENERTY: I never got 2A.

MR. HARVIE: It has not been distributed. It is information that was made available to the Board.

MR. FENERTY: It is all analyzed in 2A?

MR. HARVIE: Yes.

A THE WITNESS: It should be 10% of the total of the other items. I would have to take those and add it up.

Q MR. FENERTY: Look, perhaps you need not do that. Perhaps with this in mind that the schedules 1 and 2 indicate that in some cases the percentage of the whole original cost which is set apart for supervision and administration, is substantially greater than others. Would you just tell me about that?

A If I understand you correctly, that should not be true. Supervisional and administrative expenses are a flat percentage.

MR. HARVIE: I would like to say that that is exactly 10%, that \$2030.75 is exactly 10% of the figure that is depreciated.

MR. FENERTY: It is worked out on a straight percentage basis?

A Yes, that is true.

Q I am sorry. Just at a casual glance I thought it was a different percentage, your administrative and supervisional expense?

A It was 10% of the total estimated costs.

MR. CHAMBERS: I do not think it works out at that.

K. R. Teis,
Cr. Ex. by Mr. Fenerty.

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I am looking at the supplement that was put in. Take the item B-H1-I-K, the supervisonal and administrative expense is \$2,030.00, and for the pipe and the other materials it is twelve thousand odd, for the installation it is ten thousand, and you get twenty-five thousand or twenty-two or twenty-three thousand, and 10% would be more than the \$2000.00, and it would not be 10% of that.

A THE WITNESS: Well, I will tell you where that comes in, your pipe price in this schedule 3 is undepreciated price. I have taken this supervision as 10% of the depreciated value of the system. If that is not a flat 10% it is just an arithmetical error, and can be corrected.

Q MR. FENERTY: Well I am going to leave those details and I want to come down and discuss some general principles with you. As I said at the outset, my understanding is that there are many methods of valuing which have been adopted by experts and accepted by utility Boards in the States, in Public Utility Enquiries. You are familiar with that? That is correct is it not?

A I think generally that is true. I do not set myself up as being a utility expert, and I do not feel competent to pass on those matters.

Q And this method of replacement costs less observed depreciation is a method, I understand, used by utility valuator's in times of rising costs, is that a fair statement?

A I would not know.

Q For instance, is it the method used by you under all circumstances?

A I do not suggest that I would use this same basis under all circumstances. It seems to be to be appropriate in this case and that is why I used it.

T-2-1 10.50 A.M.

K. R. Teis,
Cross-Examined by Mr. Fenerty.

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Q Well now, just coming back to that other question. Is not that generally true from your own knowledge?

A I really do not know.

Q I am going to repeat it to you, that that method of replacement cost less observed depreciation is, generally speaking, the method used by representatives of utilities in eras of rising costs. Do you know anything about that?

A I do not know about that.

Q I see.

A I have no opinion on it.

Q You have used other methods have you?

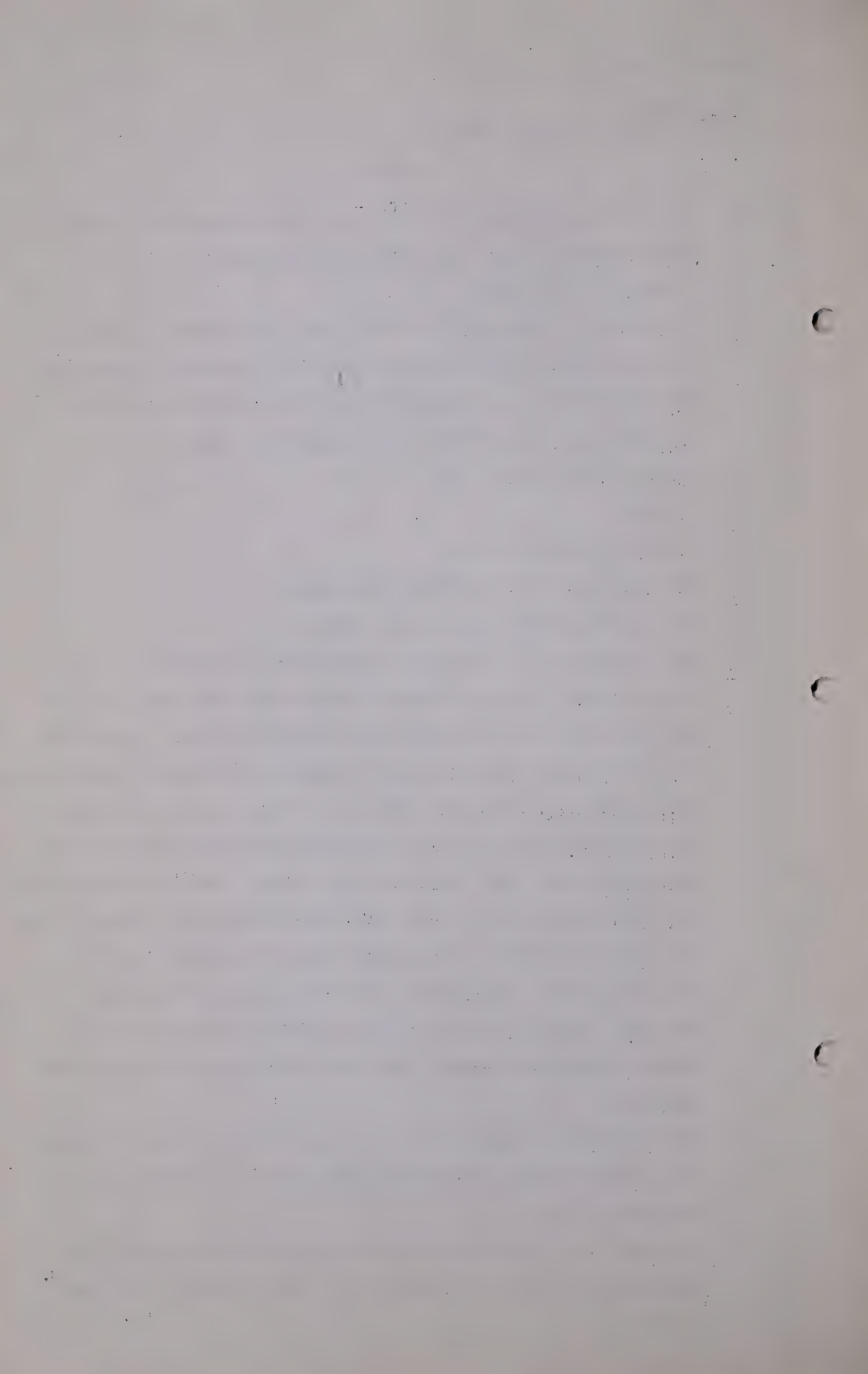
A Yes I have probably used some others.

Q Now I am going to ask you to assume this situation. I am going to take figures from an actual case and I am going to ask you to assume this situation confronting you. A certain item of railroad construction which at the time of construction cost \$42,000 a mile and some two or three years later when the physical appraisal was being made for reasons we do not need to go into they cost \$12,000 a mile. Now you assume that you have before you on the stand that situation. You are here to value that work. Its present cost of construction is \$12,000 a mile. Its actual cost two years previous was \$42,000. Would you mind telling me what system you would adopt? Those are figures from an actual utility case in the States.

A No, I cannot on such a brief statement of the facts as that.

Q Is it fair to say you would at once adopt the actual construction costs?

A I do not feel competent to advise this Board in regard to what is proper for the valuation of these assets. My work



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K. R. Teis,
Cross-Exam. by Mr. Fenerty.

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consisted merely of placing a value on this single operation of the system. I am not an expert in the matter of utility valuation. I view this in the brief light of the utility as a going concern, not with all the ramifications of amortization, depreciation and so forth that might be involved. I look upon this as a simple, clear-cut trade. Now my conception of the value is what that would be worth to a ready and willing buyer and a seller willing to sell under present conditions. I have no theories as to what might have been done under certain other conditions.

Q You have then, and that follows, no theories as to how this Plant should be valued for the purposes of this Inquiry. Does that follow from what you have just told us?

A I don't think so, no.

Q You do not think it does?

A No sir.

Q Well then, coming down to this plan, the situation as I understand it now is that the present cost is substantially higher than the actual cost of this old equipment, that is right is it not?

A Well that may be true but you are going into a utility business now and you are going into it flat.

Q Do you know that to be so?

A Sir?

Q Do you know that to be so?

A What is that?

Q That the present replacement cost of this kind of equipment is substantially greater than the actual cost.

A I do not know what you mean by actual cost. It is certainly higher than it has been in times in the past, I will grant you that.

K. R. Teis,
Cross-Ex. by Mr. Fenerty.

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Q Well, the actual cost is what they bought it for, that is what I mean.

A As to material, I do not think that is true, no.

Q Let us for the moment assume it is higher. Do you say that that higher cost of replacement than the original cost of the system, the present cost less observed depreciation is fair and reasonable. Is that your idea?

A Do you mind repeating that question?

Q I say assuming for the moment that the present cost is in excess of the actual cost at the time it was bought, do you say that a valuation based on the present cost less observed depreciation is a fair and reasonable one?

A I do, yes.

Q Now then, assuming for the moment that the reverse had been true and I want to apply this railway case to you now in this way. Assuming for the moment that the present cost of that equipment was substantially less than the actual cost, would you say that the present cost less observed depreciation was fair to the utility?

A I would, yes.

Q They would take the loss that they had sustained?

A It is selling now. They are not selling it some time in the past or in the future at prices which should prevail but under present conditions, in my conception of values.

Q Then your idea of utility valuation is no matter what the circumstances are, whether present costs are more or less than the actual costs, ^{is} the present cost less observed depreciation for physical assets is it?

A As I have previously stated, I do not set myself up as being an expert utility valuator. I have no very well crystallized ideas and theories as to what it ought to be. I merely

9 8 7 6 5 4 3 2 1

10. *Phragmites australis* (Cav.) Trin. ex Steud.

K. R. Teis,
Cross-Ex. by Mr. Fenerty.

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adopted a basis of valuation here which I thought was proper without any particular regard to the ramifications of utility valuations.

Q Is the situation this then, Mr. Teis, that you put a higher value upon present prices less observed depreciation and you have done so?

A No, that is not true.

Q Well then now you say you are not prepared to take the position as a valuator for utility purposes as an expert, is that what you tell me?

A I say I am not an expert in that line.

Q Then you are not in a position to give us any recommendation as to the valuation of this Plant for utility purposes, that follows does it not?

A I do not think so, no.

Q Well you are not an expert on that. You say that don't you?

A Yes, I have said that.

Q You have just said that haven't you?

A Yes.

Q And that being so, you are in no position, if you are not an expert, to give us an expert opinion.

A I have done a lot of valuating work and I consider myself qualified to place a value on this property for the purpose for which I assume it is to be used.

Q What I want to get now is whether you are coming on the stand to give expert opinions as to the proper valuation of this Plant for utility purposes before this Commission. If you are say so and if you are not say so.

A That is my purpose in being here, yes sir.

Q I am going to pay you the compliment of treating you as an expert, no matter what you said a few minutes ago.

K. R. Teis,
Cross-Ex. by Mr. Fenerty.

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A I appreciate that, thank you.

Q As an expert, I take it you are familiar with some of the principles which have been applied in utility work.

A In a general way, yes.

Q By the way, as I understand, in your valuation you have nowhere taken into consideration the original cost of construction of anything. I am speaking now of the old work, not the new work.

A I did not have anything to do with the new work.

Q I am speaking entirely of the old work.

A Yes.

Q There has been no consideration of the original cost.

A No sir I did not give any consideration to that.

Q And do you think in utility work there should be some consideration to original cost?

A In this case I do not think it is significant.

Q I see. Have you ever given any consideration to the principles laid down by the authorities in the States as to the things that you should give consideration to?

A I did not in this case. I might qualify that somewhat. I have given consideration to all the things that I considered to be significant in this case.

Q Did you ever hear of what I thought was the valuator's Bible in the States, the case of Smith and Ames?

A No, I am not familiar with that case.

Q I am going to suggest to you that everybody uses that to his own purpose. Each side uses it. You have not heard of that?

A I did not attempt to use anything for my own purposes in this case. I attempted to arrive at a simple and fair value.

Q If it is laid down in that case for instance that one of the items to be taken into consideration by a valuator is the original cost of construction, then you just have not followed

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K. R. Teis,
Cross-Ex. by Mr. Fenebty.

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that principle, have you?

A I did not take into consideration the original cost of construction, no.

Q And you do not think you should?

A No sir, I do not think I should.

Q Now I am going to come back once more to that question I propounded about the railroad, of \$12,000 and \$42,000. At that time you told me you were not prepared to give me an answer but you do say in applying these principles to this case if you had falling prices instead of rising prices you would have still valued this old equipment at the present lesser cost of acquisition, less observed depreciation. You were serious in that were you?

A I would apply the same basis of valuation as I have outlined regardless of what the relative comparable prices now are and were at some other existing time, because the deal as I see it is being made now. It is what the thing is worth now and present prices I think are most significant as to what the present value of the property is.

Q Then does it follow that if, in this particular work, you had an item which cost \$42,000 and the present price of that item was \$12,000 - I use the exact figures - are you serious in telling me that you would come here and value that as fair to the British American company on the basis of \$12,000 less observed depreciation?

A Well if

Q Would you do that?

A I would, yes. A man could go out on the market and buy that thing for \$12,000 and he would be a fool to pay \$42,000 for it.

THE CHAIRMAN:

There are two considerations there,

K. R. Teis,
Cross-Ex. by Mr. Fenerty.

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Mr. Fenerty. Mr. Teis says that that is what he would do, he would put that value on it. The other question is would the British American Oil Company call him as a witness under those conditions.

A They might have somebody else do their appraising.

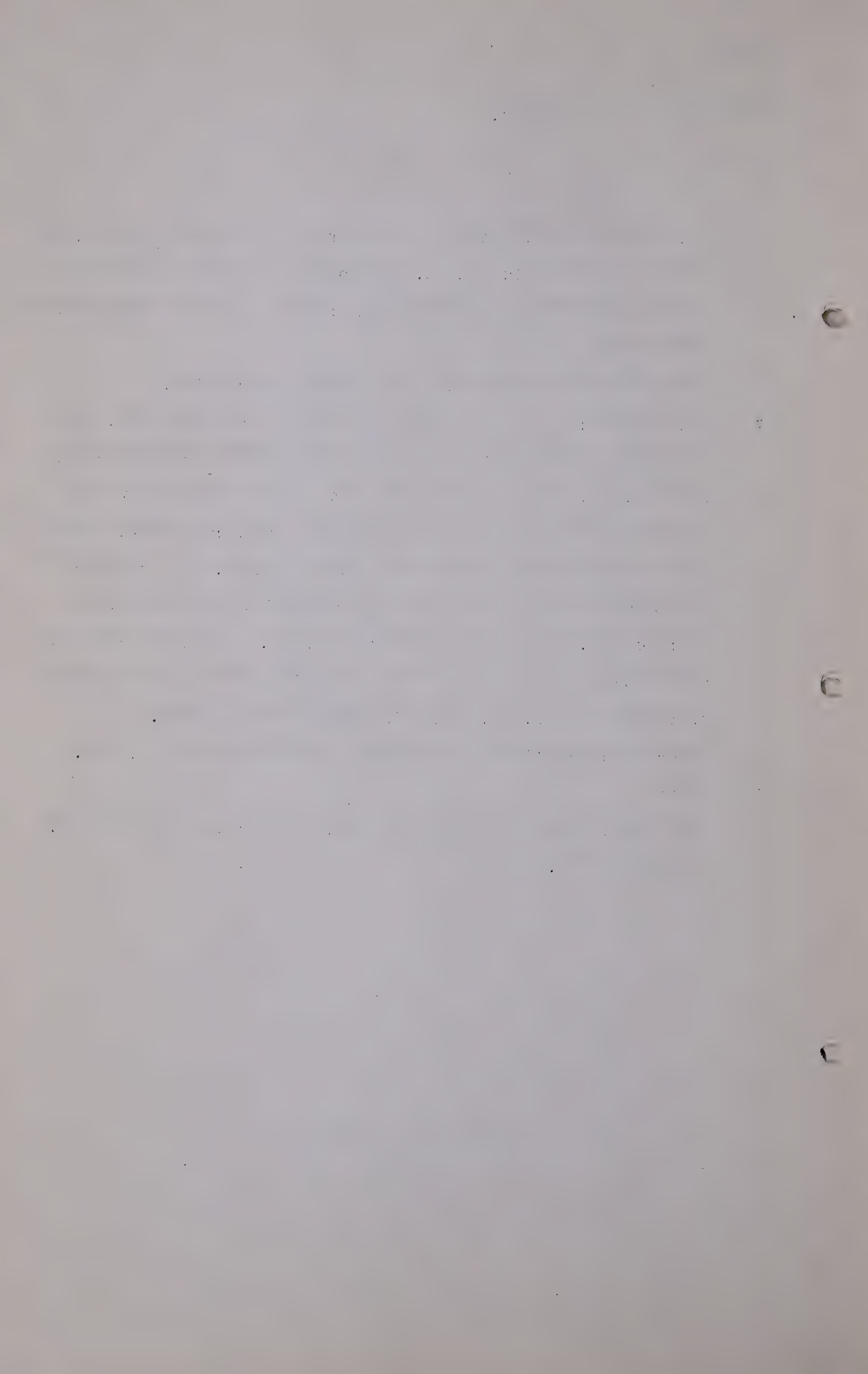
Q MR. FENERTY: Let us take this assumed case. You have here today an item in your schedule that actually costs say \$42,000. You have made inquiries from some outfit and you have ascertained that due to some freak condition, actual present conditions, the present price is \$12,000 and there has been some observed depreciation which would bring that down to \$10,000. That item cost \$42,000. Would you come in here today and say that for this utility inquiry that should be valued at \$10,000. That is what I want to know.

A Under my conception of the thing I would so value it, yes.

Q What?

A Under my theory of valuation as applied here, I would have so valued it, yes.

(Go to page 2770)



K. R.. Teis,
Cr. Ex. by Mr.Fenerty.

- 2770 -

Q Under that system would you use that method?

A I would, yes.

Q I see. Well you are consistent anyway. That is your system through thick and thin; now have you used any other system?

A I have probably used other methods of valuation, yes.

Q So then it is not your system through thick and thin, you do vary your method to meet conditions, do you not?

A To some extent, yes.

Q Yes?

A If I were determining, however, a fair market value I think this would be my system regardless of conditions generally.

Q Would you just tell me under what conditions you would vary from this system and use some other, give me an illustration?

A Well I cannot, I do not know. As I say I would not care to describe a theoretical situation under which I would vary it.

Q I see.

MR. FENERTY: Well now, Mr.Chairman, I am going to be some little time if the Court wants to recess.

THE CHAIRMAN: Perhaps we had better take ten minutes now.

(A short adjournment was here taken).

(Cross-examination of Mr. Teis continued by Mr. Fenerty).

Q Mr. Teis, just following a question or two that I asked you, are you in a position to tell me of an utility case or cases where, for reasons known to yourself, you did adopt another system of valuation than that adopted here?

A No.

MR. HARVIE: Will you speak a little louder, please, Mr. Fenerty.

K. R. Teis,
Cr. Ex. by Mr. Fenerty.

- 2771 -

Q MR. FENERTY: Now, I note a place on page 32 of this Exhibit 102, where you say.....

A Perhaps I had better have a copy of that exhibit, I have nothing here except my report.

THE CHAIRMAN: It is page 3 of your report.

Q MR. FENERTY: The second paragraph:

"No account has been taken of the adequacy, efficiency or economy of the general design of the system."

Do you not think you should have taken account of that?

A I attempted to amplify that somewhat in my, at the time I read the letter; in some respects that may not be a precise statement of the facts. I attempted to explain just what my attitude towards the matter was at the time I made the appraisal.

Q Well did you give any consideration, whether it is expressed in your report or not, as to the adequacy, efficiency or economy of the general design of this system?

A Generally not, no.

Q Did you give any consideration to it? I do not mean in your report, but off the record, so far as this report is concerned?

A I may have given some thought to it.

Q Yes?

A However, I do not think it necessarily enters into an appraisal of this type.

Q I would like to have the benefit of your opinion about it so far as you considered it?

A Well as I have previously stated, I considered this as a trade and my task was to determine the fair market value; I feel that the system is generally useful for the purpose for

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1. *Chlorophyll a* and *Chlorophyll b* contents were determined by the method of Lichtenthaler and Whistler (1973).

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K. R. Teis,
Cr. Ex. by Mr. Fenerty.

- 2772 -

which it is being put.

(Yes.

A Now it may be, as I have stated, that some of the lines might be changed a few inches as to diameter and even the location might be changed some, if a new system were being designed by, starting from scratch you might say, from the beginning.

Q Yes?

A That is what I intended to convey in that statement there in that paragraph.

Q But you do not reflect any of that in your valuation?

A Well I think I did.

Q In what way?

A Well in my depreciation factor. I attempted to arrive at a fair price for the system as it was.

Q Did you not depreciate by the observed depreciation, mechanical measurements of pitting and so on?

A I did.

Q That does not reflect any of these ideas of yours, does it?

A Well I would not go so far as to say it did not, no.

Q Well you will not go so far as to say that it did, will you?

A I think to some degree it did.

Q Let us be frank with each other, you did not give any consideration to that in computing your actual figure of depreciation, - show me one item where you did it?

A I gave consideration only to the extent that the depreciation factor might reflect some of those items.

Q Yes. Now did you make any inquiry or give any consideration to the possibilities of this being a plant as it existed immediately before becoming a public utility?

A I do not understand your question, Mr. Fenerty.

K. R. Teis,
Cr.Ex. by Mr.Fenerty.

- 2773 -

Q Do you know anything about the volume of production that it had available to handle under ordinary conditions?

A I did not go into that feature of the thing, no.

Q No. Whether it was situated in a declining field or an appreciating field?

A Well I had the general knowledge that all fields declined. I assumed it is in a declining field all right.

Q Is this a fair statement, that so far as you are concerned, your valuations are exactly the same as they would be had you learned that apart from this becoming an utility, that plant might have to be scrapped or might have disappeared in a year or two, those circumstances did not affect you, is that a fair question?

A I do not think so, no, I do not think so. Of course that was not the situation or, as I understood it, so I did not take that into consideration.

Q I am not saying it was the situation?

A I stated, I have so stated here, that in my opinion it is generally useful and that was my opinion and still is.

Q Now let me put it this way, for utility purposes, going back to where we started, that you take the replacement costs less actual physical observed depreciation, that is your general principle?

A That is true, yes.

Q Yes, and will you agree with me that the proper principle to apply is to endeavour to arrive at a figure in utility work that is fair and reasonable to both interests, the producer on the one side and the consumer on the other, do you think that has anything to do with the work at all?

A Well our entire effort was to determine a value which was a

K. R. Teis,
Cr. Ex. by Mr. Fenerty.
Cr. Ex. by Mr. Steer.

- 2774 -

fair value to both the seller and the buyer, that was my purpose at the time I made the valuation.

Q Do you make any distinction in your valuations for utility purpose valuations than for condemnation proceedings, expropriation proceedings?

A I think there might be some difference made in it, yes, this particular method of valuation in my opinion is quite simple, and is appropriate for the purposes at hand.

Q I do not want to be unfair to you, is this the situation that you are an engineer with long experience and you feel you are competent to value these things on the basis of costs, whether it is replacement or actual costs, and to observe depreciation, physical depreciation, and that is about as far as you are prepared to go, - is that about your situation? And I will drop all this utility work if that is your position?

A I think that is about it.

Q That is about it?

A Yes.

MR. FENERTY: Then that is all.

THE CHAIRMAN: Mr. Steer?

.....

CROSS-EXAMINATION BY MR. STEER.

Q When did you make this valuation, Mr. Teis?

A Just about a year ago.

Q In 1944?

A Yes.

Q Now that plant at that time, as you have said several times in your report, was being used as an absorption plant?

A Well the absorption plant was in operation, yes.

Q And that was the only thing which was in operation?

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K. R. Teis,
Cr. Ex. by Mr. Steer.

- 2775 -

A That is true. The gathering system, of course, was being used in that operation.

Q Yes, and the residue gas at that time was being flared, was it?

A I believe that is true.

Q And did you study the age of the plant?

A No sir.

Q Did you study the age of the gathering system?

A Well yes. You mean my observation indicated to me the age of it?

Q Perhaps you will tell us when that gathering system was installed, will you?

A Well I believe it was installed between the years 1936 and 1943 generally.

Q Can you tell us when the B.A. absorption plant was erected?

A No, I cannot tell you.

Q And your information is that the gathering system leading to that absorption plant was installed between the years 1936 and 1943, is that right?

A I believe that is generally true, yes.

Q Did you make any inquiries as to that?

A Yes, I have some dates at which the various sections of the line were laid.

Q And from whom did you get those?

A I got those from the Company, they were shown on the face of their authorization, the details.

Q Now would you tell us, - what you tell us is that this plant was generally useful, I think that was the phrase you used, for the purpose for which it was being used, is that right?

A That is true, that is so stated.

Q Now the purpose for which it was being used was for the purpose of gathering gas and transmitting it to the absorption plant,

K. R. Teis,
Cr. Ex. by Mr. Steer.

- 2776 -

where the actual gasoline was extracted from it, that is the purpose for which it was being used at that time?

A That is true, yes.

Q Yes, and when you say that it was useful for the purpose for which it was being used, that is the purpose which you had in mind, am I right in that?

A Literally speaking, that is true.

Q Yes?

A However.....

Q Well am I to understand that is your evidence or not?

A Yes, it is true.

Q Yes, yes, did you give any consideration at all to the design of that system, if instead of being designed to feed the absorption plant it had been designed for the development of a natural gas area to feed the City of Calgary?

A No sir.

Q You are referring to "coating" on this pipe line, my instructions are that the pipe in this system is not coated, I may be wrong in that - am I?

A I think so, yes, it is not, with the exception of certain lines the pipe is not wrapped and possibly some of it is not coated, but in some cases it has a coating of asphalt on it.

Q And was that the case, was that asphalt coating evident in every section of the pipe line you examined?

A I would not go so far as to say in every section.

Q Are you prepared to say in how many cases there was no coating?

A I have some field notes that would probably show that.

M-2-1 - 11.37 A.M.

K. R. Teis,
Cross-Exam. by Mr. Steer.

- 2777 -

Well just glancing over the first page here out of five examinations made, four of them mention the coating as being intact. I think this statement that I made in most cases the pipe is coated is correct. The next page here out of four examinations I specifically mention the coating in three of them.

Q Three out of six or three out of four ?

A Then in the other case there is on the first page there were five examinations, coating is mentioned in four out of five. No it is mentioned in all of them on the first page, I beg your pardon.

Q Is this true, Mr. Teis, you are not in a position to say whether that whole system is coated or not ?

A You would have to dig up every foot of pipe to make certain of that.

Q And so far as your observations are concerned and you have dug up some portions of it you say that some were coated and the greater number were not ?

A I would say that some of them were coated.

Q DR. BOOMER: Was there any wrapping ?

A I think not. I think on the line they bought from Royalite and I think on one other line they were wrapped. The rest of them were not wrapped.

Q MR. STEER: Now is this method of depreciation you used of depreciating material only rather an exceptional method of valuing depreciation ?

A I do not know that it is.

Q Would you say that is the method you usually follow ?

A Well this is as I stated previously several times my conception of this thing and the reason for not applying the depreciation factor against the intangible cost and that is about all I

K. R. Teis,
Cross-Exam. by Mr. Steer.

- 2778 -

could - I cannot add anything to that.

Q Well, of course, there are these kinds of intangible costs in every item that is ever depreciated are there not. What you call intangible costs ?

A That is true, yes.

Q Well then in every case where you have to determine the depreciation you have got to decide whether or not you are going to depreciate materials only or whether you are going to add to the material these other costs which you have omitted. Is that right ?

A I do not know whether your question is quite clear to me.

Q I say these intangible costs as you described them are present in every case of a valuation are they not ?

A That is true, yes.

Q And consequently the problem as to whether they are to be included for purposes of depreciation is present in every case of a valuation ?

A I think that is true, yes.

Q Now then why did - did you ever in any valuation which you made include these intangible costs ?

A I undoubtedly have, yes.

Q Then on what basis do you decide whether or not they are to be included ?

A Well I can tell you in this case as I have stated several times.

Q Mr. Teis, you will excuse me. I am not asking you about this. I am asking you about your practice and I am asking you under what circumstances you would include for the purposes of depreciation these costs which you call intangibles?

A I cannot make a general statement as to that.

K. R. Teis,
Cross-Exam. by Mr. Steer.

- 2779 -

Q All you are prepared to say in this case you think they ought not to be included ?

A That is it, yes sir.

Q And you have no particular reason for stating that ?

A No particular reason for stating what ?

Q That they should not be included in your valuation ?

A I would not say that. I have explained several times the best I can.

Q Perhaps you will explain them again and that may answer my other question ?

A The reason I did not include them was because as I stated previously, I look upon this as determination of a fair market valuation between a willing seller and a buyer, willing to buy. Now I further considered the system generally useful for a purpose for which it is being purchased. That being true it would be necessary to reproduce a system in general in order to carry out the purposes for which it is being purchased. Therefore I see no reason if the purchaser must necessarily instal similar facilities, why he should not be - why it is not fair for him to be asked to pay the costs that such a new system would cost less the depreciation of the material itself. In other words ditching and back filling, laying and so forth, do not physically deteriorate.

Q Now the first suggestion that I made to you is that from your evidence I gather that would be your approach to any problem of valuation that you undertook ?

A No I would not say that.

Q You would not say that ?

A No I did not say that.

Q Well then under what circumstances as I asked you before would

K. R. Teis,
Cross-Exam. by Mr. Steer.

- 2780 -

your approach be different ?

A Oh I do not think I can state that.

Q You say that you might have a different approach under different circumstances, but what the circumstances are you are not prepared to say. Is that it ?

A I can probably name some considerations setting up a valuation, depreciating it out on a pay out of wasting assets for accounting purposes.

Q Are we not dealing with a wasting asset ?

A You are dealing with a wasting asset but that element I do not think is appropriate to this valuation.

Q Do you know the life of that field that you were dealing with ?

A I have been told and read reports that indicate it is around twenty-five or thirty years.

Q Do you know how long the life is of the pipe in the ground ?

A Well I have an opinion, yes.

Q What would you say it is ?

A Well I would say that pipe will last thirty to fifty years.

Q And the pipe, all the labour and everything connected with that pipe is going to be useless after twenty-five years although it may have a life of fifty. Is that right ?

A Well I do not know exactly, it will become useless. I did not go into that phase of it.

Q If that is true were you dealing with a wasting asset ?

A Well I think the matter of dealing with a wasted asset is indisputable, but I do not think it is consistent with my conception of this appraisal.

Q But I understood you to say - perhaps I was wrong, but I understood you to say if you were dealing with a wasting asset then your approach to depreciation would be different from the

K. R. Teis,
Cross-Exam. by Mr. Steer.

- 2781 -

approach you have made here ?

A I think you cut me off before I got through talking. I said if you were setting up a valuation on the wasting asset for the purpose of amortizing an investment or charging off a capital item, why then of course if you want to charge it off in the time you anticipate its usefulness would be ended why then you would have to depreciate all of the items that went into the capital cost or you would not come out where the investment would be completely charged off.

Q Do you know Mr. Hill ?

A No sir, I do not.

Q Do you know his reputation ?

A Well all I know about him is what I read in his testimony.

Q Mr. Hill took quite a different approach to this question of depreciation as perhaps you are aware of. You think he was wrong and you are right ?

A I think I am right.

Q Whether he is wrong or not.?

A Yes.

Q And if his method is different from yours, then is his wrong and yours right ?

A I do not have any opinion about his method. I think mine is appropriate to this situation.

Q And you think it is appropriate to this situation because you are making a sale ?

A Yes sir.

Q And the sale is as you are aware from an incorporated company to a wholly owned subsidiary. Did you know that ?

A Yes sir I think that is true.

Q And your method is appropriate in that situation ?

K. R. Tois,
Cross-Exam. by Mr. Steer

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A I think it is, yes.

Q You made, I suppose, no effort to evaluate the service rendered by this gathering system to the absorption plant ?

A No sir.

Q As compared with the service rendered to the natural gas utility?

A No sir, I did not attempt to do that.

Q Now materials, you have valued at present day costs ?

A Correct.

Q Including all the inefficiency of present day labour ?

A That is true, yes.

Q I think my learned friend Mr. Blanchard is going to pursue that question and I will not go further with it, but so far as labour costs are concerned you simply adopted what was being paid today to the Gentry Company or what was being paid recently to the Gentry Company ?

A That is correct.

Q On Page 35 you used for supervising and administration expenses, you add 10% and Mr. Hill as I recall it used 9% ?

A I believe that is true.

Q Pardon, you are aware of that ?

A I think that is true, yes.

Q And your view is that your 10% is correct ?

A I think that is correct. It is a pretty close check.

Q What is the basis upon what you compute that ?

A Well my general knowledge of what it costs to do the work and the statement of the Company, that was approximately their cost. I think it is a reasonable figure that I used.

(Go to Page 2783)

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Cr. Ex. by Mr. Steer.

- 2783 -

Q Now just another question of two, Mr. Teis. As I understood you, you were regarding this system that you valued as being purchased for a use to which it had been put to, is that right?

A Well, an additional use that it was put in the past.

Q Now, which was it that you regarded it?

A Well of course, it was used for a gathering system, for the absorption plant and the gas so gathered will still go through the absorption plant.

Q Well then, should that have made any difference in your view of the value of the system?

A Well as I understand it, I am not prepared to say what is going to be done about that, but as I understand it that does not have any bearing on this value. It is to be taken care of in some other value. If I am wrong about that I was misinformed.

Q What you say is this, that if somebody wanted to go and buy that gas gathering system which would be used for a natural gas business, that you would tell them to pay reproduction cost new less observed depreciation for the system as it stands there?

A I would tell them in my opinion that was a fair value of it, yes.

Q Now, you are a petroleum engineer, are you not?

A Yes sir.

Q And you know perfectly well that if that field was being developed as a natural gas field, it would have about one-tenth of the number of wells that it has in it today?

A I do not know that that is necessarily true, no.

Q You do not?

A No.

Q Do you know how many wells there are in that B.A. area?

A Why, I think they are connected to somewhere around 40 to 50

K. R. Teis,
Cr. Ex. by Mr. Steer.

- 2784 -

wells, as I remember. If I am wrong I will stand corrected.

Q Perhaps I can get that.

MR. HARVIE: Are you talking about the B.A. area so far as the wells that this old gathering system was connected to or including the new wells?

MR. STEER: If I could get the information I would like to know the number of wells in that area that are connected with the B.A. absorption plant.

MR. HARVIE: It is all on record.

THE CHAIRMAN: The high pressure system?

MR. STEER: Yes sir. Well then, if it is on record we will try and find it.

MR. HARVIE: It is on the Board's record.

Q MR. STEER: Well, we will say there are 50, you think there are 50, we will be able to find out how many there are.

MR. HARVIE: Mr. Steer, will you just give me the date. They are changing every few weeks. What date do you want and we will give you the figures.

MR. STEER: Let us have the date on which Mr. Teis made his valuation.

Q You think there are 50, Mr. Teis?

A Well there is no use of me guessing if you are going to look it up.

Q I am not sure that it is being looked up and I do not want to waste a lot of time. Do you know what the area is that is connected up with the B.A. absorption plant?

A No, I do not.

Q These documents appear to be headed with respect to township 18?

A It looks like it might be about 7 square miles, something around

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K.R. Teis,
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there.

Q And what you say is that during your experience there are 50 wells at least in an area of six or seven square miles?

A I do not think that is an unreasonable number of wells. However, I did not go into the matter of flow of that gas, sub-surface flow of that gas. That did not enter into my study, and I would not be prepared to say what would be the ultimate number of wells for the development of the South end of Turner Valley.

Q I think we might put it this way, that you gave no consideration whatever to the dual use to which this system was being put?

A I do not know exactly what you mean by the dual use.

Q Well, I mean this, that the gas is gathered and it furnishes gas to the absorption plant and then from the absorption plant the gas goes into a natural gas system that comes to Calgary, do you understand that?

A Yes sir.

Q That is a dual use, isn't it?

MR. HARVIE: I can give you that figure, Mr Steer, 68 wells as of November 1944.

MR. STEER: Thank you.

A Well you might consider numerous uses.

Q Quite so?

A Most certainly the collection of the gas, the gas collected, is processed through the absorption plant, you cannot deny that. We cannot deny that the gas is processed through the absorption plant. That is undoubtedly true. There are other uses, of course.

Q And the gas that issues from the absorption plant, of course, has been gathered by this gathering system?

A That is very true, yes.

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Q That is true?

A Yes.

Q And I understood you to say that your recommendation was that a person who wanted to buy that property which you valued for the purposes of the natural gas development, would pay or should pay the price that you intimated, is that your statement?

A Yes, that is true.

Q Did you study the book depreciation of this property?

A No sir.

Q That had been taken?

A No sir.

Q That is all.

THE CHAIRMAN: Mr. Chambers?

MR. CHAMBERS: In the first instance, I am not asking a question, except to ask Mr. Harvie one. We have not been furnished with volume 2-A, Mr. Harvie.

MR. HARVIE: That is simply the details.

MR. CHAMBERS: And that is part of Exhibit 102?

MR. HARVIE: We have not filed it.

MR. CHAMBERS: I just wanted to know.

THE CHAIRMAN: If you want it filed you can have it.

MR. CHAMBERS: Oh no.

MR. HARVIE: The information is available.

CROSS-EXAMINATION BY MR. CHAMBERS

Q MR. CHAMBERS: Mr. Teis, will you turn to page 31 of Exhibit 102 and in the first Table on that page there appears the heading "Pipe-Nominal diameter" and you give the sizes. Just for the purposes of the record could you indicate to me whether that is the outside diameter or the inside?

A That is the internal diameter.

Q Internal diameter?

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K. R. Teis,
Cr. Ex. by Mr. Chambers.

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A Yes.

Q Now could you tell me the weight per foot for each size of pipe, as outlined here in this Table on page 31? You may not have it available, but could you get that for me?

A Well, I have stated in this discussion here that the records of the company regarding this material left something to be desired, and I made every effort to determine so far as I possibly could, by the examination of the company's records, and by the inspection of the lines, exactly what size pipe was in there, in any particular spot in the system, and what weight pipe, but I am not stating that there may not be some error in that. However, I made a detailed study of their billing and their statements of their authority at the time that the expenditures were made in considerable detail, and I am satisfied that the weights and diameters shown here are substantially correct, and that they are very close to the over-all situation, but I am not prepared to say that any particular foot of line buried underground is of a certain weight. I think that the diameter as shown is correct.

Q Now then, Mr. Teis, probably I can shorten the matter by telling you this, that I am not interested in that, that is not what I was directing my attention to. For the purpose of arriving at your figures, I assume that you did arrive at them, for the purpose of your figures, no matter where you got them, you used the weight per foot for each size pipe in the system, did you not?

A I did, yes.

Q Will you give me those figures?

A No, I am not prepared to give them to you now.

Q But I mean could you give them to me today or tomorrow?

Number of hauls	<i>P. setiferus</i> (%)	<i>P. setiferus</i> + <i>P. setiferus</i> + <i>P. setiferus</i> (%)
1	100	0
2	80	20
3	60	40
4	40	60
5	20	80
6	10	90
7	10	90
8	10	90
9	10	90
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7. The following are the names of the persons who have been appointed to the various committees of the Board of Directors:

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A I do not know whether I can or not. I can give you a general statement of it if that will suit you.

Q No, it does not suit me. If you can give it to me I am asking you for it, and I am asking you for it if you can give it to me while you are in Calgary.

MR. HARVIE: We will file a statement of that.

Q MR. CHAMBERS: Will you turn to Page 33 of Exhibit 102, under the heading, the paragraph headed "Material Prices", you say "The prices, which furnish the basis of value for all items of material, were furnished to the company by vendors of such supplies and represent the present market price of like new material". Just for the purposes of the record, I would like to get from you the date, the specific date you have in mind when you say present market prices. I notice that your report is dated.....

A I would say that is as of the date of the report.

Q The outside of this report is dated February, 1945. That is not the date?

A I dated my report November 22nd.

Q So that the present market price referred to in that paragraph on page 33 to which I have alluded is November 22nd, 1944, or thereabouts.

A That is approximately it.

Q Now, Mr. Teis, there is a thing that I am a bit interested in. As I understand it, you told my learned friend, Mr. Harvie, that you had telephone conversations and some correspondence with Mr. Biddison, is that right?

A That is true, yes.

Q Have you got that correspondence available?

A Yes sir.

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Q As a result of your conversation or correspondence with Mr. Biddison, did he indicate to you that he had seen a copy of your report?

A Yes, he had seen it.

Q And the communications that he had with you were concerning this report which has been filed as Exhibit 102, is that right?

A It was in regard to my report and the valuation on this particular property, yes.

Q What, if any, exception did he take to this report or parts of that report?

A Well I do not know that he took exception to any of it. He asked a few questions.

Q He asked some questions by way of explanations from you and you furnished him with certain information in response to those questions, is that a fair way to put it?

A Yes.

Q And you have not heard from him since?

A That is true, yes.

Q That is all.

MR. HARVIE: Mr. Chambers, the correspondence is available if you want it, and if it will help.

MR. FENERTY: I am just wondering if we are not gradually getting into a method of taking two engineering reports without cross-examination. I cannot just understand the purpose of it being referred to. If there is any suggestion of the approval or otherwise of somebody else in that regard, he should be brought and put on the stand.

MR. HARVIE: We were told that Mr. Biddison was to be a witness to this inquiry, as I understand it.

with a number of other

people who were present

at the time

of the event

which took place in the

city of New York in the

year 1900

and was held at the

Grand Central Station

in New York City

and was attended by

many people

who were interested in

the subject of the

event

and was held at the

Grand Central Station

in New York City

and was attended by

many people

who were interested in

the subject of the

event

and was held at the

Grand Central Station

in New York City

and was attended by

many people who were

K. R. Teis,

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MR. FENERTY: Is he going to be a witness?

THE CHAIRMAN: Who told you that, Mr. Harvie?

MR. HARVIE: It was information that came through our office, our information that he was directed to do that and I assumed that it was to be in evidence.

THE CHAIRMAN: He was appointed by the Government as a consultant to the Board, that was all.

MR. FENERTY: I see.

THE CHAIRMAN: And we never knew whether we would call him as a witness or whether we would not.

MR. HARVIE: It might be that he still would be called.

THE CHAIRMAN: No, he won't be called, Mr. Harvie. He won't be called unless something happens which I do not know about now. I do not know what is in the letters and I do not think it matters particularly. We have been very informal. We have broken all the Rules of Evidence up to the present time. I do not think that we should now smash what fragments are left, and permit a letter to go in that Mr. Teis received from some gentleman in Chicago and have it as part of the record.

MR. CHAMBERS: I have not gone that far.

THE CHAIRMAN: No.

MR. FENERTY: Pretty close to it.

MR. HARVIE: The matter has been referred to and as far as we are concerned we are quite prepared to file the letter if there is any person wanting it.

T-3-1 12.09 P.M.

K. R. Teis,
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MR. STEER: I would take it Mr. Teis' evidence stands on its own feet regardless of any approval by Mr. Biddison or disapproval.

MR. FENERTY: I think if he is not going to be here, we had better forget it.

THE CHAIRMAN: Mr. McDonald.

CROSS-EXAMINATION OF THE SAME WITNESS BY MR. McDONALD.

Q Mr. Teis, can you tell me anything of the comparative costs of material between November, 1943 and November, 1944 in this particular job?

A No I cannot. I did not investigate that.

Q Would you say they are approximately the same?

A I don't know.

Q I suppose you were conducting your professional activities in 1943?

A That is true, yes.

Q And you were also in active practice in 1944. Did you build anything in 1943?

A Not that would give me any indication of the price of materials out here in the Turner Valley field, no.

Q Well let us take them generally, the Oklahoma district and Texas.

A I am not prepared to make a statement as to comparative values, I do not know.

Q From your engineering experience would you say the general level of steel prices in 1943 was very close to the general level of 1944?

A I do not know.

Q What have you got to say about the general level of prices in 1944 as against the general level of prices say from 1935 to 1938?

1. *Phragmites australis* (Cav.) Trin. ex Steud.

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K. R. Teis,
Cross-Ex. by Mr. McDonald.

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A Nothing.

Q THE CHAIRMAN: When you say "nothing", do you know anything about it, Mr. Teis?

A No, I would not know. I have not made a comparison of that sort. I am not prepared to say.

Q MR. McDONALD: Now where did you get these current material prices to which you refer on page 31 of your report?

A Well I think I have explained that but I do not mind going over it again. Some of the prices, in fact most of them, were furnished to me by the Company, transmitted by letter after having been obtained, as I understand it, from the local vendors here in Calgary and other places. Several of the items I obtained prices on in Tulsa from the National Supply Company and I think some from the Oilwell Supply Company. As to the spiral pipe particularly I got that from the Mid-Continent Supply Company.

Q And to that price you got from the Mid-Continent you added tariff and transportation by rail?

A Yes sir.

Q And delivery in Turner Valley?

A Trucking.

Q Have you got the calculation by which you did that?

A Yes I have.

Q Can you produce it now or is it available?

A Yes, if necessary.

Q Well what I want to do is to find out just how you arrived at the price of the spiral pipe. What did you get from the Mid-Continent and what did you add? What did you add for transportation, loading and all the rest of it? Have you got that worked out?

A Of course unloading and hauling and stringing and so forth

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is in the contract. I did not make any determination of that. I added freight and the tariff. I do not have this in shape to submit it as an Exhibit.

Q Can you read the information?

A I can tell you how I got at it here. For instance this 10 inch spiral weld pipe is 12 gauge lower thickness; has a weight of 14 pounds per lineal foot. The price, as given me by the Mid-Continent Supply Company of Tulsa was a base price of 69.05 cents per foot.

Q MR. HARVIE: Is that at the factory?

A That, I imagine, is the base mill price. The freight was 21.98 cents and the pipe plus tax, plus duty, was \$1.12.55 per lineal foot.

Q MR. McDONALD: That did not include freight, the \$1.12?

A Yes, I think that includes freight. I think that is the price I used. I find this item in detail here. Yes, that includes everything that \$1.12 no, I am mistaken, that does not include freight. Freight brings it up to about \$1.34½ cents per foot.

Q That is 10 inch spiral pipe?

A 10 inch, 14 pound Naylor's spiral weld pipe.

Q There is 6900 feet shown in your Schedule I of that pipe?

A That is right, yes.

Q You brought the 10 inch oilwell casing 2158 feet to the same price?

A Approximately so. Let us see if I can find that here. In line B-C and B,H,I,K. . . . No, only in line B-C we find some 10 inch oilwell casing. The price new was \$2.23 per foot and I reduced that price to \$1.33.

Q Which compares to \$1.34½?

K. R. Teis,
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A It was \$1.33-7/10ths, approximately \$1.34.

Q Can you tell me whether this spiral pipe is more valuable or more efficient than straight line pipe?

A No, I would not say it was.

Q Is there much difference in price? Is it a cheaper product?

A Well I really do not know what the comparative cost is.

Q What I was thinking is is it comparable to 10 inch pipe listed in Madison's submission?

A Well I do not know. Generally speaking it is a lightweight pipe and therefore cheaper than line pipe or casing. I assume it is, I am quite sure it is. I have a price here for 10 inch line pipe supplied by Crane to British American, \$2.88 a foot.

Q DR. BOOMER: What weight?

A That is 32 pounds. Of course it is a much heavier pipe.

Q MR. McDONALD: Now on page 3 of your report, page 32 of the exhibit, you refer to abnormal internal corrosion, in the last paragraph.

DR. BOOMER: What is that page, Mr. McDonald?

MR. McDONALD: Page 32 in the last paragraph.

A Yes sir.

Q Now what was the normal deterioration or normal corrosion in this pipe, having in view its service life, one per cent per year or two per cent. What is normal corrosion?

A I do not know, I never heard of it.

Q How do you arrive at the abnormal internal corrosion if you have not something to base it on, just what did you mean?

A Well, relatively speaking that is I thought it was low.

Q Having in mind the use to which this pipe had been put previously, it was in good shape, is that really what you meant?

A What was your question?

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K. R. Teis,
Cross-Ex. by Mr. McDonald.

- 2795 -

Q Having in mind the use to which this pipe had been put previously to your inspection you thought it was in good shape.

A I think that is a fair statement, yes.

Q Now you do not know, for instance, whether this casing that was put in the line had ever been used in a well or not before it was bought and put in this line?

A I think it was probably second-hand when it was put in there, yes.

Q You do not know whether the spiral pipe had been previously used or not?

A I am quite sure that was new.

Q And about the 2 inch and 4 inch lines, do you know

A Well some of it, of course, was used. Possibly most of it was used I might say but I was inspecting it to determine its condition at the time of my inspection and whether it was new or old when it was put in the line did not enter into the thing. If it was depreciated 25 per cent when it went in there and it had been depreciated another 5 per cent after it got in there I put it down in my opinion it had reached a stage of 30 per cent depreciation.

Q That really is a matter of your observation?

A Yes sir.

Q Forming an individual opinion?

A That is true, yes.

Q It is true generally from your observation that there is little corrosive action ensues from the use of this pipe as transmitting gas in Turner Valley.

A I think that is true, yes.

Q Is it more or less than gas lines you have inspected in other areas in the United States?

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A Well I would say generally that the soil corrosion is quite low. As to the internal corrosion I think it is relatively low.

Q Now what can you tell me about the cost of coating this pipe as an individual operation. I mean if this pipe was taken and going to be laid in 1944 what would be the cost of coating it per foot?

A I do not have any price on that.

Q Do you think 6 cents per foot for 2 inch pipe would be an abnormal cost or a normal cost?

A I am really not prepared to say on that.

Q Have you any idea of the cost of wrapping?

A No sir.

Q If this pipe was coated, all of it coated, would it prevent deterioration from the soil to any great degree?

A I do not think it would have any material effect on the life, the useful life of the pipe.

Q And wrapping would not help a great deal?

A I do not think it would in this field.

Q Having in mind this particular soil and the observations you have made.

A Yes. There is a very well drained subsoil there and so far as I can detect there is no acid action.

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Q Now at the bottom of page 4 of your report, page 33 of your Exhibit, you refer to:

"In fixing the discount factor I have taken into account the observed condition of the material and have given weight to the relative utility and salvage value to that of suitable material purchased at present day prices."

Just what did you have in mind under "relative utility"?

A Well I have in mind specifically that adjustment I made in the casing price to that of the special weld price. I do not think the utility value of the pipe in the ground was such as to warrant such a high price and of course working in a reverse direction the casing would probably have a higher salvage value than the special pipe although I would not consider that of any great moment because I do not think the salvage value is going to be very high anyway.

Q No. Do I take it from you that salvage is not an element in this matter of valuation which you have made?

A Well I would not say it is totally disregarded but it is a very small element in it.

Q Is not salvage a matter of depreciation allowance rather than value?

A In my mind it is what you will be able to sell it for when you get through using it.

Q Have you any ideas as to what the salvage would represent in the lines throughout the Valley at the end?

A Nothing except to say I think it would be a very small proportion of the cost of it.

Q Would it be different as between a 15 years' use of the line and a 25 years' use of the line?

A Well it undoubtedly would be different but in what direction.

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I do not think you can say for certain; it depends upon the marketability of the material at the time it is salvaged and that depends on factors that I am not able to predict.

Q Have you any rough figure as to the percentage of salvage value for a line of this kind?

A No.

Q Nothing in your mind?

A No, I have not. You cannot determine precisely I might say what that would be.

Q If you will turn to page 35, page 6 of your report, page 36 rather, page 7 of your report, now throughout your whole report you have referred to a number of uncertainties, - you are not definite for instance as to the pipe, what pipe is exactly in the ground, you do not know exactly what type of pipe is in the ground.

A I think generally speaking I know very close to the overall but the pipe has been transferred around and rather inadequate records kept of those transfers, that is lines, some lines have been taken up and relaid over a period of years and it is rather difficult to exactly identify the location of that particular pipe but summing up the total statement and descriptions of this pipe I think we can come pretty close to just what the overall situation is. I think the diameters of the pipe are correct as shown.

Q You have not the weight, you have not the weight of all of the pipe.

A Well we have the weight of most of it, some of it we do not have, that is true.

Q Have you taken all those uncertainties into account in arriving at your rate of depreciation?

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Cross-Ex. by Mr. McDonald.

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A Yes I have. I have attempted to be fair. I think, I took, usually took a rather light weight pipe of the diameter which was called for where there was no weight shown, that is where I was unable to determine specifically what the weight was.

Q As I take it, you are taking the depreciation, observed depreciation on the pipe and materials, and other materials and it comes to approximately 30.5 per cent.

A That must be about right. As you see there I did not figure it out in percentages, it is shown there in that total, specifically totalled exactly in dollars.

Q And you arrive at it?

A I am sure that is approximately correct, yes.

Q You add the first two columns and then divide by your observed depreciation?

A Yes.

Q That comes to 30.5 per cent. And if you take your total values including supervision and administration at the figure you have there, the depreciation comes to 17 per cent approximately.

A I imagine that is about right. I have not figured it recently. I have a notation made somewhere but I do not know whether it is that exact figure but I think that is about right.

Q Now I notice in your valuation, Mr. Teis, you include the meters as part of the valuation of the pipe itself; how many meters were there in this system?

A Well I do not know that I have ever counted up the meters but there is a great deal of detail which is not included in that submission which I think will be made available or has been made available to you, which sets out every meter and

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every half-inch fitting and quarter-inch fitting and the nipples and everything else.

Q The only thing I want is what did you value your meters at so I will have a basis of comparison with other meters.

A You are speaking about the meter itself, just the meter and not

Q Just a moment and I will tell you what I want.

THE CHAIRMAN: Have you Volume 2-A, Mr. McDonald?

MR. McDONALD: No I have not.

THE CHAIRMAN: This is the breakdown of Exhibit 102.

Q MR. McDONALD: What I want, Mr. Teis, is the value of the meter itself, the bearings

A Well I see here one thousand pound Foxboro, Foxboro orifice meter complete at a price of \$301.25, the whole lot; I did not specifically describe each meter but I think they are almost alike. Here is a 250 pound Foxboro meter complete with manifold and stand, \$301.25.

Q That would include the meter set up ready to operate?

A Yes, with the stand and the small connections which go along with the meter.

Q DR. BOOMER: Which does not include the flanges?

A No, here is another here, Foxboro, 250 pound meter complete with by-pass the same type, it seems I have used that price uniformly throughout.

Q MR. McDONALD: What about the labor of installation, labor costs?

A That is a separate item, that is over in this "connection labor" which I see here.

Q You show that in the connection labor in 2-A; what did you have for installing one meter?

A I did not set that out separately in my report. I may be able to find what it was.

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MR. HARVIE: Page 54, connection labour 145.

Q MR. McDONALD: How many hours did you attribute to the connection of one meter, Mr. Teis?

A I probably have that somewhere in my computation but I am not prepared to say what it was. The way that was handled, I viewed every meter setting and every valve box and every junction, and with Mr. Taylor, the plant superintendent, we attempted to determine the amount of labour involved in each particular point. I do not know whether, I cannot say for sure whether we broke it down as to the amount of work which was involved in setting the meter in each case or not. We were standing there and looking at the work and I asked him what he thought the amount of work was and if it was reasonable I put it down and if it was not we argued about it and finally arrived at some hourly man-hours of labour which was probably involved in doing the job and then that was set out at 65 cents per man-hour, and that furnished the basis for the labour costs.

Q That was done in connection with each junction point?

A Junction point and main line or lateral gauge, meter setting, or drip, all those appurtenances.

Q What have you to say to an allowance for general supervision and administrative expense, that is exclusive of engineering, inspecting and supervision, of 2%?

A I do not have any comment to make on it, I do not think.....

Q And then for engineering and supervision, 3%?

A Oh, I think that is largely a matter of company policy. That might vary between rather wide limits. Some company might consider it necessary in their engineering to detail the work in much greater, to a much greater degree than others. I

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Journal of Management Studies, 19(1), 67-80.

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think that 10% for over-all is a reasonable figure.

Q Now dealing with survey costs, you have taken them into account at the rate of \$150.00 per month; now that survey, I understood that was actual costs, you checked the Company's records for that?

A They furnished me that figure and I think it is a reasonable figure.

Q Would it be a reasonable figure if the job was done all at once, say, if the whole thing was surveyed and laid out?

A Well I think by the time you made your location survey, and then your permanent survey, and then probably went back and measured up the work and one thing and another, that that is a very reasonable figure; that would only amount to something around \$1000.00 for the entire job, which is a very reasonable figure. I would not want to do it for that myself.

MR. McDONALD:

That is all.

(Go to page 2803).

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1. *Phragmites australis* (Cav.) Trin. ex Steud.

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1. *Phragmites australis* (Cav.) Trin. ex Steud.

1. The first group of people who are interested in the study of the history of the United States are the people who are interested in the history of the United States.

M-3-1 - 12.43 P.M.

K. R. Teis,
Cross-Exam. by Mr. Blanchard.

- 2803 -

CROSS-EXAMINED BY MR. BLANCHARD:

Q Mr. Teis, you were asked something about depreciation by Mr. Steer, and you said in this particular instance in any event you thought it proper not to estimate for labour in intangibles?

A In this particular case, yes.

Q Suppose you had found on inspection that the pipe was 95% gone. That is practically scrap value. Suppose you had found that on inspection, would you still have appraised the labour and other intangibles at 100%. The pipe line is gone. Are you still going to value those things that went into the pipe line?

A I would go back to my client and tell him he had nothing to sell.

Q They would not have any administration and supervision to sell?

A No that is true.

Q And they would not have any labour to sell. That is correct?

A Oh if there was 95%, of course, it would not be useful.

Q Suppose it was 80% gone. Would you still value the intangibles at 100% or would you take off 80% for the value of those?

A Well I think if I had found the condition of the system such that in my opinion it would not be useful during the period estimated as the probable life of the field, I think I would have made some adjustment some way or another. I do not know just how I would have done it.

Q Well I think you will agree that it is desirable that the same basis of valuation and depreciation should be applied throughout the whole field. That is the north and south end. The whole system. Would you agree to that?

A Are you asking me a question?

Q Yes.

A Will you please restate it. I beg your pardon.

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K. R. Teis,
Cross-Exam. by Mr. Blanchard.

- 2804 -

Q I mean you would agree with me that it is desirable to have the same factors of unit costs and the same factors of depreciation applied to the British American as would apply to Madison ?

A I do not think that is at all necessary.

Q You think it would be fair to value on an entirely different basis for the other ?

A Well if the situation called for such -

Q Do you know of any reason ?

A I do not know anything about the Madison system. I am not prepared to say.

Q Do you know why the intangibles should be depreciated in the Madison system and not in the British American ?

A I am not familiar with the Madison system and I do not know the basis.

Q I am not saying you are right or the other people are wrong or you are wrong and the other people are right, but I am asking you whether you would agree that this Board should try to get to some uniform basis for the whole system which includes the Madison and the British American ?

A I would not care to.

Q You would not care to commit yourself ?

A I think that might have been desirable if it was outlined in the beginning but since the valuation is already made I do not see any reason.

Q Have you ever given evidence in cases before the Federal Power Commission ?

A No I have not.

Q Then there are just one or two things in connection with your evidence about the casing that was used for pipe line purposes. You mentioned in particular I think in the first instance, the

K. R. Teis,
Cross-Exam. by Mr. Blanchard.

- 2805 -

12" casing. 12" casing ?

A Yes.

Q It was used in your line A-B ?

A I think that is correct, yes.

Q That is just from the absorption plant north ?

A I think that is probably so stated.

Q Have you got your break-down of these different parts of the transportation system ?

A Yes I have a lot of detail there.

Q I think this is 2-A, should go in as an Exhibit here. It has not been tendered as an Exhibit.

THE CHAIRMAN: No I think it has not.

MR. BLANCHARD: Then I think it should go in.

THE CHAIRMAN: Would you look at this document, Mr. Teis, and tell us if that is a break-down or rather perhaps a detailed report which has been summarized by you in Exhibit 102 ?

A Yes, I presume. I have not examined this in detail, but I have every reason to believe it is an exact copy of my detail.

MR. HARVIE: I am willing to have that go in.

THE CHAIRMAN: I think you are right, it should go in as Exhibit 103.

THE BRITISH AMERICAN OIL COMPANY LTD.,
DETAILS OF INVENTORY ESTIMATES OF
VALUES SHOWN ON APPRAISAL NOVEMBER
22ND, 1944, GAS GATHERING SYSTEM, VOL-
UME 2-A, IS NOW MARKED AS EXHIBIT 103.

Q MR. BLANCHARD: Do I understand that the witness adopts this as his own break-down of the figures ?

A Yes sir that is my work.

Q And are you armed with a copy of it there ?

A I submitted it to the Company, this report here, and bound with the letter of transmittal and Table #1 and #2 is all this

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K. R. Teis,
Cross-Exam. by Mr. Blanchard

- 2806 -

detail which you are referring to.

Q All right, now will you look at Page 3 of this break-down,
that is 2-A I think it is ?

A Will you give me the line number.

Q Gas Pipe Line A to B. Have you got that ?

A Yes.

MR. HARVIE. It might be of assistance if I gave him my
copy so that the references will be the same.

Q MR. BLANCHARD: That is Page 3 of your detail.

A Line A-B.

Q Now I find you have 1810 feet of 12" oil well casing which you
value at a unit price of \$3.3158 ?

A Yes.

Q Is that correct ?

A Yes sir.

Q Have you applied the spiral weld casing price to that item ?

A I did that in my 50% depreciation.

Q What is spiral weld new worth, \$1.58 ?

A I gave that figure to Mr. McDonald just a while ago.

Q You have the very next item, 1760 feet of 12" 12 guage spiral
weld ?

A As I stated it may not figure out to the penny but if you take
50% of 3.31 you will get \$1.66 as compared with \$1.58.

Q And then you do not depreciate it at all for any other purpose?

A Well that is extremely heavy pipe and after bringing that down
equal to a 12 guage pipe I do not see any reason for further
depreciating it.

Q You put it then at its value now ?

A No sir. I put it in at the value of new spiral weld which is
approximately half of what this pipe costs.

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K. R. Teis,
Cross-Exam. by Mr. Blanchard

- 2807 -

Q For the purpose of this system spiral weld pipe is just as good casing ?

A I am not saying it is as good, but it is serviceable.

Q All the pipe after all has to do is to carry gas during the life of this field ?

A Well I brought it down to equivalent value so I assumed it was approximate.

Q Now then you did depreciate the spiral weld pipe 25% ?

THE CHAIRMAN: If I may interrupt there. What Mr. Teis did as I see it was to make an allowance for obsolescence to the extent that material in that pipe could not be used and he then made no valuation for depreciation.

MR. BLANCHARD: For physical depreciation.

A I do not think any further depreciation is indicated because you have a very heavy conduit there and it is 100% equal to the service and much heavier than is necessary so why it should be further depreciated it does not seem reasonable to me that it should be.

Q MR. BLANCHARD: I just wanted to know. Now you gave us today your totals here and I think or as a matter of fact Mr. Harvie has since furnished us with a supplementary volume #2 where there is a deduction from this total amount of \$534.88.

MR. HARVIE: That is correct. That will come in on Mr. Donahue's evidence.

Q MR. BLANCHARD: Now you said you made your prices on the Gentry contract. Have you got it there ?

A I have a copy of it here.

Q May I have it. Perhaps my friend has a copy.

A If you have a copy there it would be much more convenient because I have this one stapled together with about five staples.

1. Introduction

The purpose of this study is to investigate the effects of various factors on the performance of the system.

2. Methodology

The study was conducted using a combination of theoretical analysis and experimental data.

The experimental setup involved the use of a controlled environment to measure the system's response.

3. Results

The results of the study show that the system's performance is significantly affected by the input parameters.

Specifically, the data indicates that the system's output is directly proportional to the input.

Furthermore, the study found that the system's performance is also influenced by the duration of the test.

The data shows that the system's performance decreases as the duration of the test increases.

4. Discussion

The findings of this study suggest that the system's performance is highly sensitive to the input parameters.

It is recommended that future research should focus on optimizing the system's performance.

5. Conclusion

The study concludes that the system's performance is significantly affected by the input parameters.

6. References

7. Appendix

8. Acknowledgments

9. Contact Information

10. Disclaimer

11. Notes

12. Figures

13. Tables

14. Glossary

15. Index

16. Bibliography

17. Appendix A

18. Appendix B

19. Appendix C

20. Appendix D

21. Appendix E

22. Appendix F

K. R. Teis,
Cross-Exam. by Mr. Blanchard

- 2808 -

Q And you took the unit prices, the exact unit prices from the Gentry contract as I understand it and then you converted those into Canadian funds ?

A Yes.

Q Is that correct ?

A That is right.

Q Do you know that under the Gentry contract, the Gentry Engineering Company imported all its labour from the United States for the particular job ?

A No I do not know anything about that.

Q Did you read the Gentry contract ?

A I read it, yes.

Q Did you see that was in ?

A I do not dispute that is in there if you say it is. I just do not remember it.

Q It is not what I say. I want to know why you adopted unit costs without knowing what they were based on ?

A I did not adopt the unit costs without knowing what they were based on. I read the contract several times.

Q You mean you do not remember it now ?

A I do not remember now that there is any statement in there that labour was to be imported from the United States.

MR. CHAMBERS: Are you putting in the Gentry contract ?

MR. BLANCHARD: I am going to. I would like to look at it. I have not seen it before.

THE CHAIRMAN: I think we will adjourn now and that will give you all an opportunity of looking at it.

(At this time the Hearing was adjourned to Tuesday, September 11th, 1945 at 9.30 A.M.)

